ISSUE 28 ■ NOVEMBER 1991 ■ £2.95

ST FORMAT

Argonaut (*Starglider 2*) reckon *Birds of Prey* is "the most comprehensive flight sim ever created" – but then, they would say that, wouldn't they?

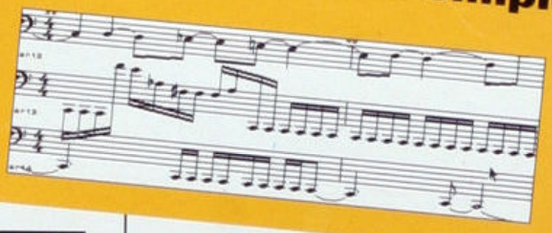
DON'T MISS! MiG-29M SUPERFULCRUM ON THIS MONTH'S COVER DISK

BRITAIN'S BEST-SELLING MAGAZINE ... THE ST

MAKE MOUNTAINS OUT OF MAYHEM

ON THE DISK
All you need to do this on *your* ST

We show you how you can create landscapes like these from a simple phone number...



...then use the same number to make mystical music

ST FORMAT COVER DISK 28

MiG-29M SUPERFULCRUM
Stunning playable demo of the sequel to Domark's *MiG-29* flight simulator

FRACTALS

MOUNTAIN
Follow the guide in this issue and create dazzling fractal scenery

GFA FRACTAL
Source code to make your own fractals

LSYSTEM
Generate exciting fractal patterns

HOME ACCOUNTS 2
Keep track of your finances with this useable demo of Digita's new accounts package

ALL PROGRAMS STE COMPATIBLE

AND THERE'S STILL MORE!

Disk format by Rob Northen

WE REVIEW AND RATE ALL THE BEST FLOPPY DRIVES YOU CAN BUY FOR YOUR ST

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fellow humans!
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That's right man! A buncha slimy, horrible, totally gross and putrid monsters are taking over the bodies of the people who live here and they wanna build a weapon that's gonna take over the entire planet!
PReTTy CoOL, HUh?
Anyway, yours truly is the only one who can see 'em! I've gotta spray-paint things, get radical on my skateboard, use my trusty slingshot, and in general behave like a nuisance, man.
Plus, with evil dudes like Nelson the bully and Sideshow Bob getting in my way, it's a good thing I've got the rest of the Simpsons to help me out!
So if you're a decent person a patriot, and somebody who cares about this sorry planet, you'll do the right thing.

SAVE THE EARTH

BUy THiS GaME!
Thanks man.

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ST FORMAT

ABC January – June 1991 **70,258**

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UK Distribution Future Publishing (☎ 0225 442244)
Worldwide Distribution MMC Ltd (☎ 0483 211678)
Circulation Director Sue Hartley (☎ 0225 442244)

Subscriptions/Mail order
THE OLD BARN, SOMERTON, SOMERSET TA11 7PY. ☎ 0458 74011 • FAX 0458 74378

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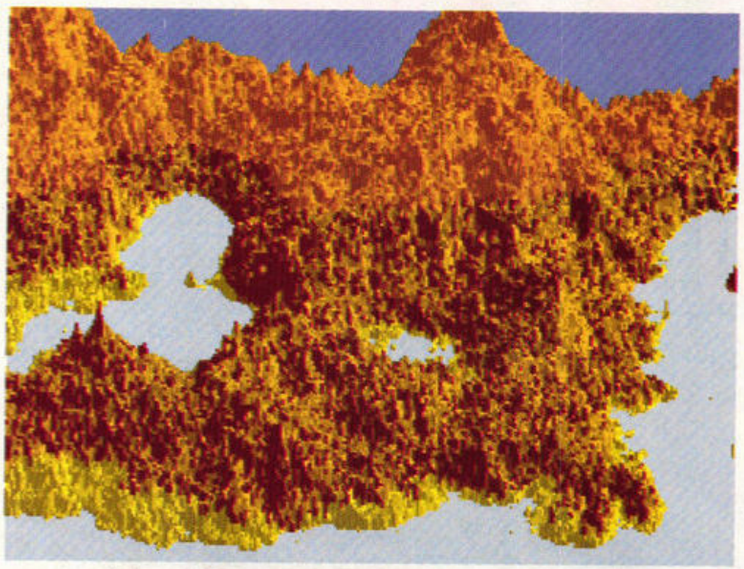
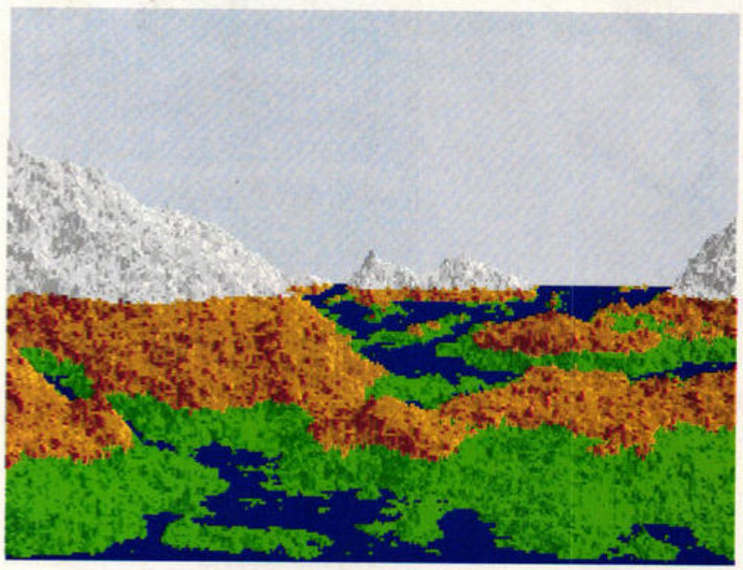


Create the craziest worlds ever – from rugged-mountain ranges like this, all the way to...



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COVER DISK 28

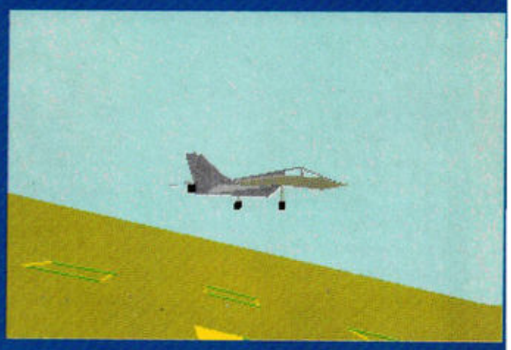
The chaos starts on page 16

Take your ST to new heights

ST FORMAT COVER DISK

MIG-29M SUPERFULCRUM

Discover what it's like to travel through the clouds at three times the speed of sound with our *exclusive* preview of Domark's brand new sequel to the *FORMAT* Gold winning *MiG-29*



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An *exclusive* preview of the latest version of Digita's respected accounts package – all you need for home or business finances! *Plus* a chance to win a 40MByte hard drive from Evesham Micros

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The ST and fractals make a perfect couple – find out how *Mountain* enables you to utilise the ST's power and graphic abilities to produce the most fantastic and realistic landscapes ever. Then try out our fractal pattern generator and make some ultra weird shapes!

Plus Teach your mouse some essential new tricks with **Mouse Tricks.** This is one of those utilities you're never going to be able to put down

WIN A TON!

Catch our in-depth landscape feature on page 34 for the complete guide to fractal magic, then write your own landscape generator using our *GFA Basic* source code on the Disk and win yourself £100!

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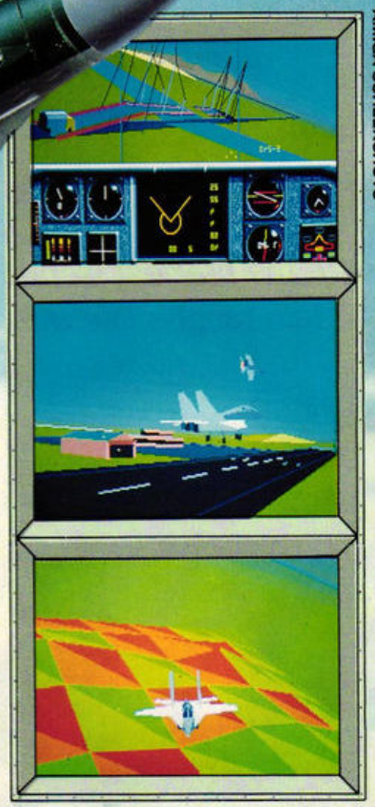
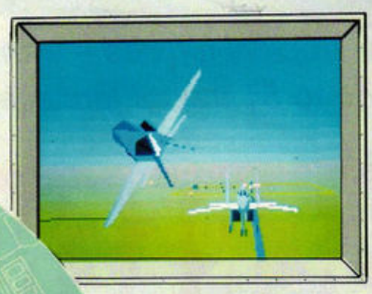


AMIGA SCREENSHOTS



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Atari demand withdrawal of *Neochrome, Joust* and others from PD lists ● Software house delay *Populous 2* release

Atari crack down on illegal PD

by Neil Jackson

Some 44 programs currently being distributed by many Public Domain libraries – including classic games and popular utilities like *Neochrome* – are not PD and should not be distributed free, Atari insist.

Atari hold the copyright on all the programs, and are circulating the long list of titles in the hope of persuading PD libraries to remove them from their catalogues. Included in the list are some ancient and well-known titles – like the popular art program *Neochrome* and the widely-hailed coin-op platform game *Joust* – which have been presumed "Public Domain" since their appearance in the UK some six years ago.

According to Bob Katz, Atari's Software Development Manager in the UK, "the situation has mushroomed. We knew that *Neochrome* could be found in some PD libraries and it would've been fine if it had stopped at that."

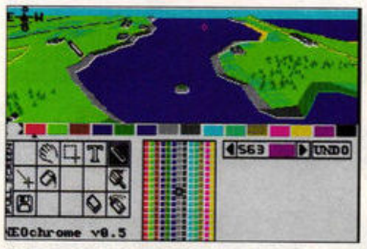
But many other Atari-owned titles have been popping up as PD and Atari began to get worried. Now copies of *Joust*, along with *Microsoft Write, Crystal Castles, Battlezone* and even *9 Lives* (which is planned for inclusion in a new Atari bundle – see page 8) are proliferating around PD libraries. "*Joust*, for example, wasn't a hot seller," said Katz, "but Atari are still selling it for compilations and budget releases. This just kills it off completely."

Neochrome has even inspired a "rip-off" version – *Neochrome Master*. This is a re-written version of *Neochrome* which, according to Katz, "bears so much resemblance to *Neochrome*, it's obvious. It's illegal and it must be stopped." Atari still make something in the region of £3,000 per year on the sales of the original, bona-fide *Neochrome*.

Katz was eager to make sure that Atari don't come across negatively as a result of the announcement. "We don't plan to get heavy with the PD libraries. Atari is totally supportive of Public Domain and Shareware libraries and we want to work with them, not against them. The list is basically to clear up the myths and is a polite request to responsible PD libraries to stop distributing these titles."

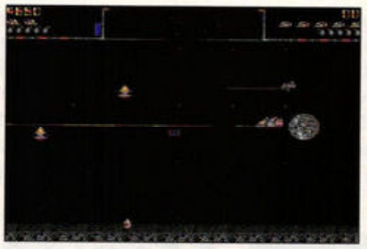
> ***"We knew* Neochrome *was in some PD libraries and it would've been fine if it had stopped at that, but the situation has mushroomed"***
>
> BOB KATZ

Atari contacted 15 libraries initially and Katz is hoping to contact many more as soon as possible. He wants to improve the level of contact between PD libraries and Atari, so that in the future Atari can release PD titles via the same libraries. Atari are planning to release at least one program, an ST test program, in this way. Katz advises all PD libraries to get in touch "so that we all know what's what, and we can work together."



● **For many years, everyone thought *Neochrome*, the popular graphics program, was Public Domain. Atari say no.**

● **Atari are asserting their copyright over *9 Lives* – once widely available but now destined for a new ST bundle.**



● ***Defender 2*, Jeff Minter's fast, frantic homage to the arcade game – or rather, Atari's. They own it and are saying so.**

ATARI-OWNED, NOT PD: THE COMPLETE LIST

9 Lives
Armada
Asteroids
Asteroids Deluxe
Atari Archive
Atari Grand Prix
Backgammon
Badlands Pete
Borodino
Bridge Master
Bridge Tutor
CHKDSK
Chronicles of Omega
Cracked
Crystal Castles
Defender 2
Enterprise
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Photon Storm
Portfolio Chess
Prince
Pyramax
Star Breaker
Star Raiders
Super Breakout
Tempest
XOR
– 44 programs in all.

DON'T MISS OUR SPECIAL SUBSCRIPTION OFFER opposite page 67

TV show seeks top game-players

Hewland International, creators of BBC's *Good Sport* TV show, are about to begin production of a ten part series dedicated to all aspects of home micro, console and arcade games – and they're looking for top game-players to take part.

The new series, *Gamesmaster*, is to be screened every Tuesday at 6.30pm from 31 December on Channel Four.

Gamesmaster will be a "magazine" format show, featuring games competitions, new hardware and software reviews and previews, software charts, hints and tips, and computer-related news items and features. The show will look at all kinds of games, from RPGs and strategy games to shoot-'em-ups, platform games and simulations.

To get things off the ground, Hewland need at least 30 competitors urgently. They're looking for skilled players of all ages to appear in head-to-head challenges. If you're interested in competing, send details of your games achievements, your personal details (age, occupation, address and telephone number) and a recent photograph to: Hewland International, *Gamesmaster* competition, 1 Indescon Court, Millharbour, London E14 9TN.

Gamesmaster is due to commence recording for five days from 4 November, in front of a live studio audience. For a free ticket to be part of the audience, apply to the same address or phone ☎ 071 712 9536 or ☎ 071 712 9533.

Try adding some byte to your ST...

Crittercal Computers have announced the latest in ST add-ons, the Critters – special cuddly toys that wrap around your monitor and make it look almost lovable. There are four species of these five-part furry creatures: the Teddy Bear, Dragon, Bunny Rabbit and British Bulldog. Each one sticks to your monitor using Velcro strips, and costs £24.99 plus £2 p-&-p. Contact Crittercal at PO Box 300A, Surbiton, Surrey KT6 5YA.

● **This "Critter" is not just cute but also a dead giveaway – we always said other machines were dogs...**

● This Christmas, Atari are hoping to sell the ST as a *"real computer."* We never thought it was any less than that!

Atari serious about their Christmas ad campaign

by Neil Jackson

As the inevitable annual Christmas crush approaches and all the home micro manufacturers struggle to divert consumer attention towards their machines, Atari are beginning their new campaign for the ST.

This year, they are pushing the ST as a *"real computer,"* stressing that "parents can be confident that they are making the best investment in their family's future." This responsible and authoritative stance is to be Atari's soapbox for the New Year.

There's been some juggling of the various "bundle-packs," underlining Atari's intention to make the ST appear as a "serious" machine, with more than just good games potential.

The 520STE Discovery Xtra pack now has a different set of four games: *Sim City, Final Flight, Robot Monsters* and *9 Lives*. It's also lost the joystick which used to be a part of the pack. Since the games are keyboard controlled, Atari consider the joystick "too gamey" for the company's new position.

The 1040STE Family Curriculum pack remains the same, keeping its emphasis on size and power but steering clear of games entirely. This setup seems to have worked very well for Atari: the Family Curriculum pack is regarded by retailers as the success of the summer of '91, because stocks earmarked for the Christmas rush had sold out by the end of August.

Atari are looking once more to TV advertising to heighten awareness of the ST this Christmas. Last year's campaign was considered such a success (the ST was the only 16-bit computer advertised on national TV) that another £2 million or more is to be spent advertising on national TV, on satellite TV and in the national and specialist press.

With Atari's new-found confidence that the ST is indeed "seriously the better computer," who knows, perhaps we'll see a more serious Atari commitment to the legions of developers writing serious applications for the ST.

Just wait for it

by Ed Ricketts

Following our extensive preview of *Populous 2* last issue (see page 130 to order a back issue if you missed it), Electronic Arts, the game's publishers, have announced that the game won't now be released until January.

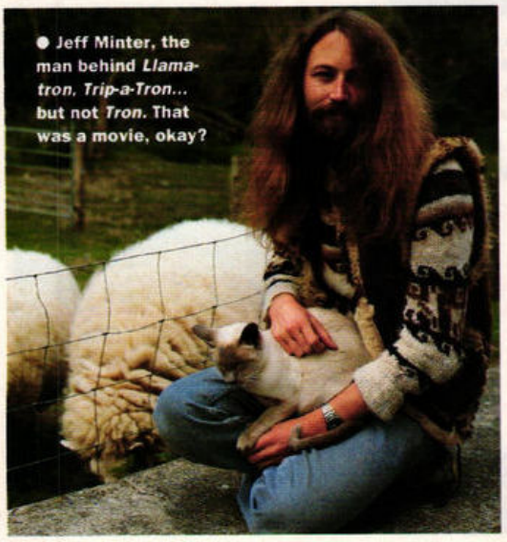
This seems like an odd move, because Peter Molyneux, head of the game's creators Bullfrog, reckons the game should be completely finished and ready for release at the end of November.

If the game were to be released by December there's very little doubt that it would instantly go to the top of the charts and stay there over the Christmas period. But EA cite the need for a well-written manual as the main reason for the decision to postpone release.

The delay also gives Bullfrog the chance to fine-tune the game more thoroughly. In particular, the team are talking of using the whole screen for the main landscape display, increasing its size with no loss of speed. The overall map display would disappear altogether or become smaller, and the other indicators would also be redesigned to fit around the expanded landscape. According to Bullfrog, these changes would only need a day's programming to implement.

One thing is certain: *Populous 2* is going to be one major game.

● ***Populous 2:*** **delayed until January, and for once it's the publishers and not the programmers who are to blame. Still, the delay gives Bullfrog time to tinker with it, and that can't be bad!**



● Jeff Minter, the man behind *Llamatron, Trip-a-Tron...* but not *Tron*. That was a movie, okay?

Llamatron author shares more

Hippie software author Jeff Minter plans to release another two Llamasoft titles as Shareware for the ST. This move is prompted by the successful launch of the dazzling hit *Llamatron* as a Shareware title early this year (aided by wide distribution on *FORMAT* Cover Disk 24, of course).

The new titles are *Colourspace*, the light-synthesizer which formed the basis of Minter's light-show generator *Trip-a-Tron*, and *Revenge of the Mutant Camels*, a laser-spitting shoot-'em-up. *Colourspace* is available now, for a registration fee of £5, and *Revenge of the Mutant Camels* is expected before the end of the year.

Commenting on the success of *Llamatron*, Minter said: "We've already made about £4,000 out of the ST version, and we're still getting about five registrations a day. While this isn't as much as you might make from a commercial blockbuster, it's definitely more than you'd make selling a commercial budget game."

Minter hopes he's given a bit more credibility to the idea of Shareware, even though he admits it took some persuasion to get the rest of Llamasoft switched on to it in the first place. However, they've seen the light, so you can get your copy of *Colourspace* direct from Llamasoft at 49 Mount Pleasant, Tadley, Hants. (☎ 0734 814478). Don't forget to include your fiver.

● **Jeff Minter's *Llamatron*, already a classic – and it was Shareware!**

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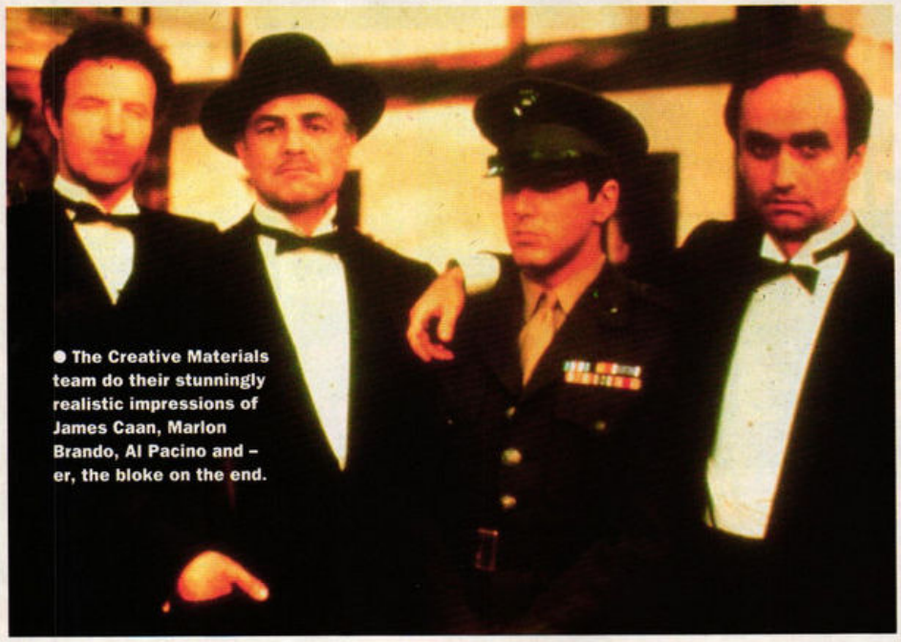

● The Creative Materials team do their stunningly realistic impressions of James Caan, Marlon Brando, Al Pacino and – er, the bloke on the end.

An offer you can't refuse?

by Ed Ricketts

Ocean may think they've acquired the biggest licence of all time with *The Simpsons*, but US Gold may yet top them with *The Godfather*. Like they did with the *Indiana Jones* games, USG will be bringing out two versions of the licence: an action game and an adventure game.

The action game will be the first to arrive. It's being handled by the programming team Creative Materials, who also did the ST conversion of *Final Fight* (to be reviewed next month), and has already been in development for almost a year. Rather than concentrating on just one of the three *Godfather* films, the game is to include reconstructions of scenes from all three.

In the game, you take the part of a member of the Corleone family as they try to maintain their position as the most powerful Family in America. As rivals and enemies try to muscle in on your territory, you must both quash them and expand your empire further.

USG are being a little cagey about just what sort of game it will be, but it seems likely it will be a scrolling beat-'em-up/shoot-'em-up. At least four levels will be included, each with several sub-levels. Level 1 is set in the back streets of 1940s New York; entering the bar takes you to a sub-level and a shoot-out. In level 2, you're taken to Las Vegas in the 1950s, with a sub-level casino. Havana in Cuba is the setting for level 3, and visiting the villa of Hyman Roth (the end-of-level baddie for this level) takes you to the sub-level. By level 4 you're battling the bad guys in Miami in the '70s, with a boat-jumping sub-level in the motor launch. Details for the other levels have yet to be decided.

Although most of the game will be straightforward arcade action, some decision making and interaction sequences are included that make use of icons and objects collected in earlier levels. In this way a slight element of the adventure game is incorporated.

The game features digitised sound and full-screen backgrounds throughout. One interesting feature is that it will support enhanced graphics on STs with extra memory. And you can expect it to come on a larger than usual number of disks, even with the compression routines used.

Unfortunately (for US Gold, anyway), it's unlikely that the game will be ready in time to top the Christmas charts. Expect to see it sometime around January, when we'll be giving it the usual thorough *STF* review.

UK Shareware comes of age

A new organisation, the ST Shareware Programmers Association (STSPA), is about to take the Shareware world by storm. It's to be managed by Malcolm Burridge of Bath Publications as a service to programmers who feel they are losing out because users of their programs are not registering for upgrades.

Membership is open to progam authors, PD libraries and Bulletin Boards on a three-tiered structure: full author membership costs £10 per year, while associate membership for libraries and BBSs costs £25 per year (including access to downloadable upgrades of registered programs) or £45 per year (for upgrades supplied on disk).

The STSPA is to set up an Ombudsman to deal with disputes between Shareware authors and program purchasers. The Association also plans to represent authors in disputes over copyright, up to the point at which legal action is started. To this end, Burridge is drafting a set of rules in conjuction with interested authors which may help to protect them from commercial exploitation of their work.

Authors can also make use of a program registration service, to be handled by STSPA. This enables purchasers to register using credit cards or cash at a single address, rather than dealing direct with many authors spread all over the UK.

STSPA plans to include full details of programs, the purchaser's rights and the principles of Shareware with every registered disk supplied to a purchaser. Burridge hopes that the STSPA will improve the overall quality of Shareware software by providing purchasers with a brand-name standard which they can rely on for the latest, tried-and-tested versions.

● As Shareware gets organised, Future Publishing announces a new magazine covering the PD and Shareware scene.

If you're a Shareware author or a PD librarian or BBS sysop, contact the STSPA at: 43 Midford Road, Bath, Avon BA2 5RW. Voice-phone ☎ 0225 836182, modem-phone ☎ 0225 840060.

■ For reviews of the latest PD releases for the ST, turn to our Public Sector pages, beginning page 47. For all the hottest information about PD and Shareware, watch for Future Publishing's new magazine, cleverly titled *Public Domain* – issue one goes on sale on Thursday 3 October, price £2.95.

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Hype or Hyper?

Databases are generally regarded as the epitome of boredom,* but all that could change with the release of *HyperLink* for the ST. *HyperLink*, designed by Canada-based JMG Software International, is more than just a database. It's a Multi-Media Data Base Manager, capable of running several database applications at once and linking the results together.

It can also be used as a text editor, graphics handler and sound and speech manager, and you can even create your own *HyperLink* applications and modules to perform different tasks.

HyperLink works by linking data in different databases together to produce collated information – all you need to do is tell it what sort of data to search for and the databases it's stored in, and *HyperLink* does the rest.

HyperLink can be used to store related images, along with speech and text, in several different databases, indexed in many different ways. *HyperLink* can then extract all the information you are specifically looking for.

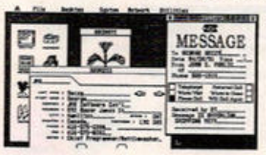
For more information, contact JMG Software International (☎ 010 1 416 575 3201) at 892 Upper James Street, Hamilton, Ontario, Canada L9C 3A5.

● **But actually, databases don't have to be boring at all – turn to page 103 for the second part of our special feature on how *you* can make use of the range of "serious" ST programs**

HyperLINK Capabilities...

HyperLINK can create links between any sort of data (one Application to another) and Modules. All you have to define is how to do the link, and HyperLINK will do the rest. For instance, HyperLINK has a built-in dbase compatible database manager. It automatically knows how to look up a name found in one database from another, you just tell it what fields to use. For more involved links, you can include custom modules for the application. An assortment of such modules is provided with HyperLINK, and many others can be added at any time (ie. programmed in C and loaded into HyperLINK with it's Module-load feature).

Each Application is provided its own windows for its forms, so a full history of links can be present on the screen at the same time, and you can effectively edit all the data displayed simultaneously. A single application (ie. the Message App) can have multiple windows displayed at one time as well (making this the first program to use the "cluttered desktop" metaphor). Of course not only can you have multiple windows open for one application at a single time, but you can also have different applications running. HyperLINK can have up to seven open windows at a time on screen. In addition you can keep an application open at a certain point but "minimize" it so that it is not taking an open window slot but is still kept available on the screen.



HyperLINK is a software product of the future. Its power and flexibility provide the solution for both types of market that might find it useful : The average user using only pre-canned applications, and the individual/company looking to develop their own specialized applications without going to the expense and hassle of hiring a consultant.

With HyperLINK... *The possibilities are endless !*

● ***HyperLink* – not just a powerful relational database, but in some ways a flexible "multi-tasking" environment.**

GOT SOME NEWS FOR US?

If you have any ST news, write to the News Editor, *ST FORMAT*, 30 Monmouth Street, Bath, Avon BA1 2BW – or if you have access to the CompuServe network, leave a message for *ST FORMAT*, User ID 100012,2571. Leads can be treated in strictest confidence if you wish, and we do pay for good stories.

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Return to STart

Goodman PD Library have just announced the tying up of a deal between themselves and Antic Publishing in the USA. Goodman have obtained the exclusive UK rights to distribute the program disks which originally accompanied the now defunct American ST magazine *STart*.

The disks contain many different programs which Mike Goodman, MD of Goodman PDL, feels "are still definitely worth distributing in the UK." *STart* was a general interest ST magazine, and the programs concerned are predominantly "serious" utilities.

The original *STart* magazine was only available in the UK by mail order, at a cost of US$14.95 an issue. *STart* was published every month, from January 1989 until Antic closed it in March this year. Goodman plans to release every issue's disk for around £6 each.

Goodman has also obtained permission to reproduce the program documentation which appear in *STart*, and is currently deciding whether to reprint these instructions or simply include them as on-disk files.

Although Goodmans PD Library is known for its large catalogue of Shareware and Public Domain programs, Goodman is quick to point out that the *STart* disks are still copyrighted to Antic. Each disk will be distributed in an unprotected but archived format.

Contact Goodmans PDL at 16 Conrad Close, Meir Hay Estate, Longton, Stoke-on-Trent, Staffs ST3 1SW, ☎ 0782 335650.

WHISPERS

ST news from all over

● **Software distributors Prism Leisure have announced their new Logotron Collection of titles for the ST. The new range includes hits like *Eye of Horus*, *Archipelagos*, *Star Ray* and *Quadralien* for a mere £2.99 each. Contact Prism on ☎ 081 804 8100 for full details**

● **In September's *STF* News, we reported that Paladin Productions, the company specialising in voice libraries for the EVS-1 synthesizer, were supplying voice data at "£14.95 a go." Paladin are actually supplying the entire range of 100 sounds and 100 groups at £14.95 until 31 October, at which time the price rises to £29.95 for the set. Contact Paladin at Field House, 7 West Terrace, Great Ayton, Middlesborough, Cleveland TS9 6PA.**

● **Desktop Designs is a another company producing collections of sounds for several different synthesizers. They are working on sounds for the Korg Wavestation, Yamaha SY/TG77 and Roland D50/D70, and hope to release collections in mid-October. Available now are collections of over 600 sounds for the Kawai K1 and Roland MT32, costing £10 each. Contact Desktop Designs at 4 Queens Road, Garden City, Deeside, Clwyd CH5 2JN.**

● **CodeHead Software are releasing *MultiDesk Deluxe*, a re-vamped versionof their popular *MultiDesk* package. It offers the flexibility of Atari's *XControl* Panel, but provides the extra ability of re-using your current Accessories rather than being limited to CPX modules. *MultiDesk Deluxe* enables you to use up to a breathtaking 96 Accessories (as compared with the usual limit of six) while consuming less memory than *MultiDesk*. For UK price and availability, contact CodeHead at PO Box 74090, Los Angeles, CA 90004, USA.**

● **Titan Designs, makers of the Reflex Graphic System, have just announced the release of an adaptor to enable 520/1040 ST/STEs to use this large-screen hardware upgrade. A huge range of monitors can now be attached to your machine, including the standard SM124 and SM125, Samsung 15 inch, A4, Eizo 5500 17 inch, Eizo 6500 and Hitachi 21 inch. The adaptor enables the Mega ST expansion cards to fit in the smaller STs. It's priced at £29.96 and you can contact Titan Designs at The Institute of Research and Development, University of Birmingham Research Park, Vincent Drive, Birmingham B15 2SQ.**

● **Sound Technology recently announced the release of version 3.1 of C-Lab's *Notator* and *Creator*. These updated versions now support the Steady Eye VITC unit, and can both be used with Fostex MTC-1 MIDI Machine Control systems. Also improved are the arrange modes of both programs, and numerous keyboard shortcuts have been included to speed up operation. Contact Sound Technology on 0462 480000 for more details.**

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ST Charts

These charts were put together by a bloke who does a lot of work for charity, but doesn't like to talk about it. Especially the bit where he dresses up as a chicken

● The colourful *Rainbow Collection* sneaks up another place to number 4. Cute characters and loads of primary colours – wear your sunglasses.

● Trying to land on an aircraft carrier isn't easy, but lots of you are giving it a go. *FORMAT* Gold winner *Flight of the Intruder* zooms up to number five.

ST CHART CHAT

At the end of the day it's all about getting into the right position. The charts are a funny old game, but Krisalis must be over the moon with this result, shooting to number one from nowhere. Er, yes, that's enough football cliches. And on that subject, haven't you all got enough football games yet? There are five in the chart. *Manchester United Europe* is still only the number ten best-seller overall, dangling below the top nine budget titles – but the top of these is also a football game! In fact, you're all a pretty sporty bunch out there, with loads of cricket fans too, even though *Robin Smith's Cricket* (at number 8) only scored a measly 44% *STF* rating. The rest of the chart is largely quality stuff – lots of Gold rated games. One of us certainly has taste.

CHARTBUSTERS – POLISH UP YOUR CRYSTAL BALL AND WIN ANY GAME FROM THE TOP 30

You'll need to polish a bit harder than that because nobody got all three right. The first out of the nearly right heap was **Martin Sweeney** from **Grangemouth.** A warm, slightly damp handshake and a copy of *Manchester United Europe* is yours.

Think you can get all three at the top of next month's chart? Go on – close your eyes, relax and look deep into the mists of time and space, then jot down your guess on the back of a postcard and send it to Chartbusters, *ST FORMAT*, 29 Monmouth Street, Bath, Avon BA1 2DL. In case of a tie, name the craziest location you can think of for doing a bungee jump. Nearest entry wins, employees of Future and their relatives may not enter, and multiple entries will be fricasseed.

ST BUDGET TOP TEN

1	↑	TV Sports Football Mirrorsoft	£9.99
2	↑	New Zealand Story Hit Squad	£7.99
3	↑	Supercars GBH	£7.99
4	↔	Ninja Rabbits Micro Value	£7.15
5	↓	Fantasy World Dizzy Code Masters	£6.99
6	NE	Pro Boxing Code Masters	£7.99
7	↓	Lombard RAC Rally Hit Squad	£7.99
8	↑	Blood Money Sizzlers	£9.99
9	↓	North and South Digital Integration	£9.99
10	↓	Xenon 2 Mirror Image	£7.99

Last Year's Top Ten

1	↔	F19 Stealth Fighter Microprose	£29.99
2	↔	Shadow Warriors Ocean	£24.99
3	↔	Kick Off 2 Anco –	£24.99
4	NE	Imperium Electronic Arts	£24.95
5	↑	Drivin' Force Digital Magic	£29.95
6	↑	Rainbow Islands Ocean	£24.99
7	NE	Battle of Britain US Gold	£29.99
8	↑	Manchester United Krisalis	£19.99
9	NE	Midnight Resistance Ocean	£24.99
10	↓	F-29 Retaliator Ocean	£24.99

1	NE		MANCHESTER UNITED EUROPE Krisalis	£25.99	see page 89
2	↓	01	FLAMES OF FREEDOM Rainbird	£29.99	*STF* 26: 92%
3	↓	02	LEMMINGS Psygnosis	£25.95	*STF* 24: 94%
4	↑	05	RAINBOW COLLECTION Ocean	£19.99	*STF* 82%
5	↑	21	FLIGHT OF THE INTRUDER Mirrorsoft	£34.99	*STF* 27 92%
6	↓	03	GODS Renegade/Mindscape	£25.55	*STF* 22 92%
7	↑	15	VIRTUAL REALITY Elite	£29.99	*STF*: 70%
8	↓	06	ROBIN SMITH'S CRICKET Challenge	£25.99	*STF*: 44%
9	NC	09	F15 STRIKE EAGLE 2 Microprose	£24.95	*STF* 26: 90%
10	↑	17	SIM CITY/POPULOUS Infrogames	£29.99	*STF* 21: 71%
11	↓	08	ARMOUR-GEDDON Psygnosis	£25.99	*STF* 10: 92%
12	↓	04	HERO QUEST Gremlin Graphics	£25.99	*STF* 26: 91%
13	↓	07	TEENAGE MUTANT HERO TURTLES Mirrorsoft	£24.99	*STF* 24: 78%
14	↓	12	LIFE AND DEATH Mindscape	£25.53	*STF* 19: 38%
15	↓	11	MONKEY ISLAND US Gold	£29.99	*STF* 23 94%
16	↑	29	F19 STEALTH FIGHTER Mirrorsoft	£29.99	*STF* 12: 96%
17	↑	25	TOKI Ocean	£24.99	*STF*25: 78%
18	NC	18	KICK OFF 2 Anco	£24.99	*STF* 14: 92%
19	NE	19	WHEELS OF FIRE Domark	£29.99	*STF* 67%
20	RE		WAR ZONE Core Design	£20.99	*STF* 76%
21	↓	16	SPEEDBALL 2 Mirrorsoft		
22	↓	20	VIZ Virgin		
23	↓	13	PRO TENNIS TOUR 2 Ubisoft		
24	NE		STRIKER MANAGER D & H Games		
25	↑	35	FLOOD Electronic Arts		
26	RE		KICK OFF AND WINNING TACTICS Anco		
27	↑	28	BRAT Mirrorsoft		
28	↓	22	FINAL WHISTLE Anco		
29	↓	27	CYBERCON 3 US Gold		
30	RE		RICK DANGEROUS 2 Microstyle		

■ NUMBERS IN WHITE INDICATE NEW POSITION ■ ARROWS INDICATE MOVEMENT ■ NUMBERS IN GREY INDICATE PREVIOUS CHART POSITION ■ RE – RE-ENTRY ■ NE – NEW ENTRY

Main charts: *STF* refers to issue and score of review in *ST FORMAT*. These full-price and budget charts are compiled and supplied by Gallup. © 1991 European Leisure Software Publishers Association Ltd

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The ST is just

The Atari ST is the perfect introduction to the world of computing. The power of the ST allows you to run "serious" applications as well as playing games, and the ST system is flexible enough to allow you to expand as you develop your interests and expertise in different applications.

With so much diversity and power it is easy to see why the Atari ST family is one of the most successful ranges of computers in the world. But best of all is the built-in growth potential. The 520ST user of today is the TT user of tomorrow; beginning with games or a simple word processor, anyone can learn about computers and gradually acquire the skills of the professional computer user. And unlike many other systems, an Atari upgrade is not wasteful. Much of the software available for the 520ST will run on both the Mega STe and the TT systems. With an Atari an upgrade means that you can add new capabilities and expand your computing horizons without losing everything you have acquired along the way.

*If you thought that computers were all about playing games you've been missing out on the real potential that you and your computer have. To find out more about either the **Atari ST** or peripherals for any applications simply fill in the coupon and send it to Atari at the address below.*

*Whether you are looking for a leisure computer, an educational computer, a computer for all the family or a powerful business system, look no further than the **Atari ST Range.***

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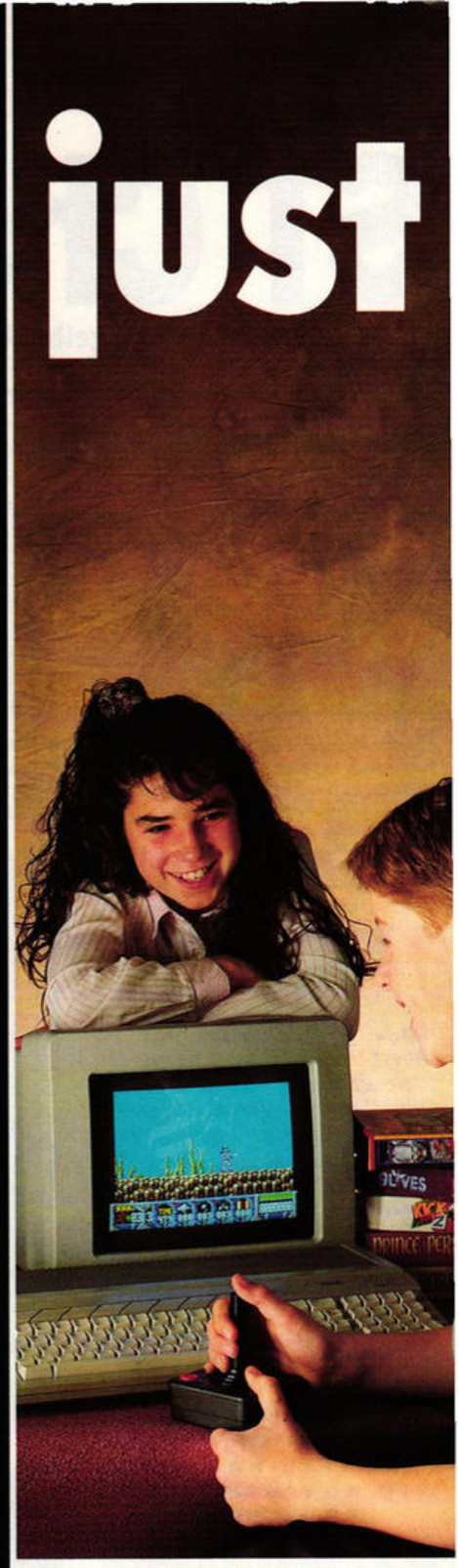

The **Atari 520ST** is an easy way for you and your family t learn about computers while having a great deal of fun. This best-selling computer has an impressive range of features that fit many requirements at home or in the office A generous 512K RAM memory is included as standard - enough to run large spreadsheets and databases as well the latest generation of computer games. There are plenty expansion ports available for printers, modems, monitors hard disk, and other peripherals allowing you to increase t power and flexibility of your system as needed.

MIDI expansion ports are fitted as standard. MIDI (Musical Instrument Digital Interface) is the music industry standarc interface that allows you to control both recording and playback of synthesisers and other digital instruments with your computer.

There is no other computer range in the UK that can offer users such a wide variety of software support, ranging fror educational learning programs to 16-bit computer games t professional quality desktop publishing packages.

The ATARI ST

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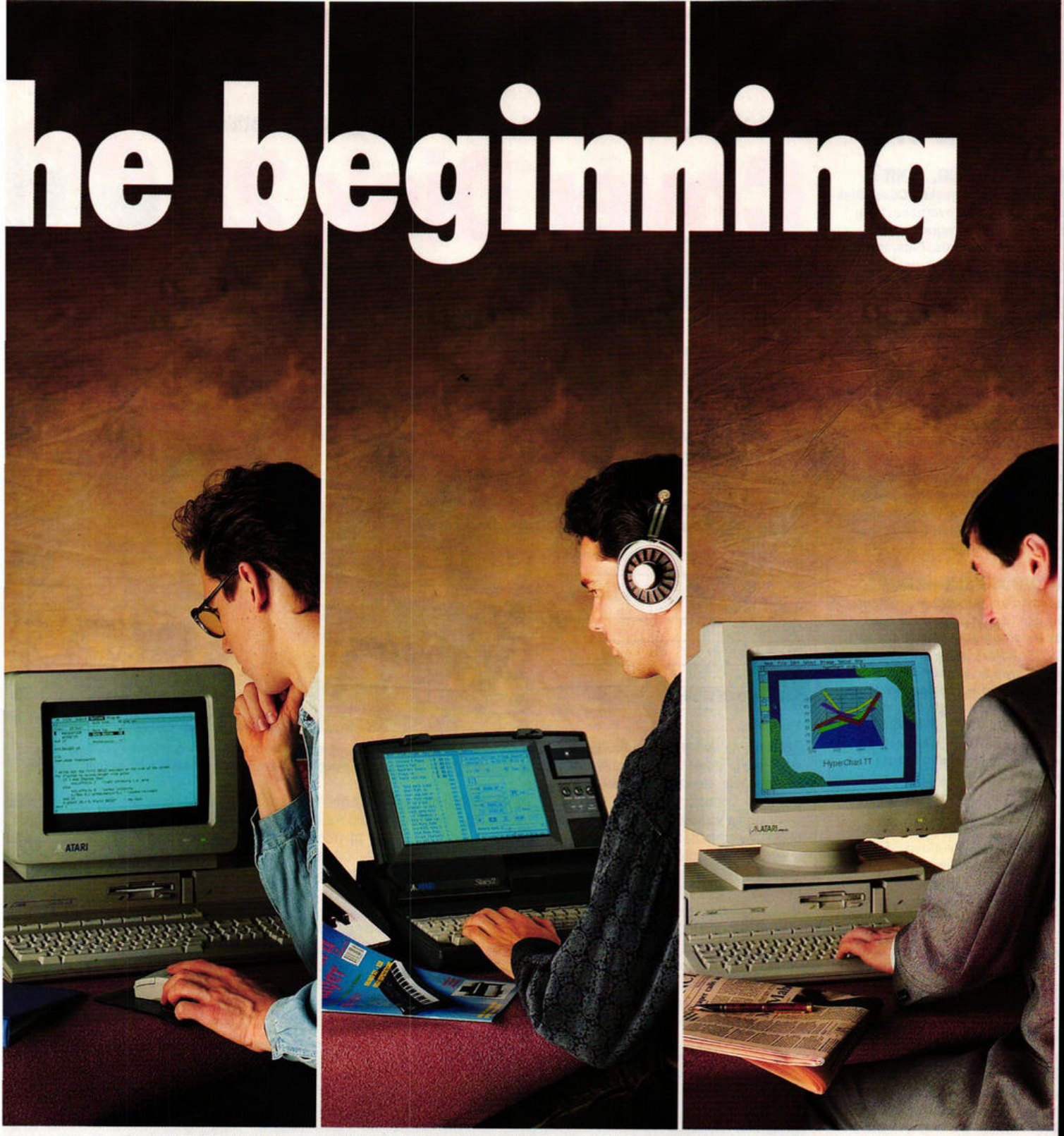
he beginning



ower of the new **Mega STe** range makes it a serious nder for those who are after power computing. It is an machine for the student or computer enthusiast who ; to run memory intensive applications such as puter Aided Design (CAD) or graphics applications. Mega STe features separate keyboard and central ssor with a 1MB floppy disk drive and a 50MB Hard for data storage. The Mega STe features a fast 16MHz ting speed, which can be switched to 8MHz to run any ams developed for the 520ST, making it even easier for upgrade.

ose of you who want to run a 'home office' with ate files for word processing, spreadsheets and nts packages the Mega STe - with its vast amount of n hard disk storage - is an excellent choice. For those g graphics intensive programs the faster operating will make the Mega STe a much more productive ine. The Mega STe also features an extensive range of sion ports that allow you to add even more power and lity to your system.

The portable **Atari Stacy** is completely compatible with all monochrome ST programs, but allows for complete portability.
It features a supertwist backlit LCD mono screen, split horizontally and has all the standard ST ports. It is available in various configerations, with Hard disk as standard.
It weighs approximately 15.2 pounds and has its own carrying handle making it easy to transfer from place to place.
Because the ST, with its MIDI interface has become the accepted standard in the music industry, the Stacy is a boon machine for musicians with a busy schedule. Songs and sequences written at home can be stored on the built-in hard disk, then the whole computer can be easily transported to the studio or gig, with minimum stress, they can even be worked upon and improved on the road.
Although it is the most specialist member of the ST family, the Stacy is still versatile enough to be used for all serious ST applications.

The incredibly powerful **Atari TT**, at the very top of the Atari range, is the first in a new generation of high specification professional personal workstations based on the successful Atari ST standard. Similar in style and design to the Mega STe, the Atari TT features a separate keyboard, 1MB floppy disk, 50 MB Hard Drive and the same range of excellent expansion ports. The basic model comes configured with 2MB RAM which can be expanded up to a massive 26MB. With a Motorola 68030 central processor, the TT runs at up to 32MHz. But speed and power are not all the TT system offers the professional user. Six standard built-in screen resolution modes mean that there is always one suitable for the purpose that you have in mind. For animation or computer graphics, choose from a pallette of over 4,000 colours with the ability to display 256 on screen at any one time, and the exceptional 1280 x 960 pixel high resolution mode is one of the best screen modes available at any price.

- More than just great games

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LOAD IT!

LUMME, IT'S BIG, INNIT?

This month's jam-packed Cover Disk has something for everyone, from game-players to programmers, accountants to artists. Plus, for this month only – added chaos! You'll find enough data to keep you busy until the next action-packed Cover Disk hits the streets in a month's time. Where else can you get so much?

ONE-SIDED TALES?

Everybody's heard the horror stories, but no-one had the solution. Until now. *ST FORMAT* is the only magazine which caters for both single and double-sided drive owners. With our Cover Disk, you know you can always read at least the first side, no matter what type of ST you have, what age it is or where you got it! Now is that egalitarian, or what?

AN IMPOSSIBLE DREAM?

It seemed an impossible problem. How can two types of drive read entirely different data from the same disk? Rob Northen was the disk duplicating supremo who finally conquered the hardships, sold himself to medical and disk science and came up with the stunningly named *ST FORMAT* format. With this, everyone had total access to the world's greatest Cover Disk.

DOES IT WORK?

If you own a double-sided ST then you won't even notice the disk magic being performed. That's intentional! You'll find everything which is stored on the flipside of the Disk stashed away in the folder called Side_2. If you can open this then you haven't got a care in the world. Just get in and get playing.

IT WON'T LET ME IN!

If you try to open the Side_2 folder and get a rude message telling you about damaged data, don't worry. Your ST is just telling you in its own subtle way that it's only got one side on its drive, and have you thought about upgrading? Just click on "OK" and you can still access the folders on Side 1 as normal.

THE BOTTOM LINE IS SAFETY

Whatever your ST setup, you can't afford to take risks. *FORMAT's* Cover Disk is guaranteed virus-free – our duplication master disks are tested personally by the Tech Ed himself. But this doesn't make it fireproof. If the write-protect tab on the disk is left enabled (closed), then viruses can gain access to the disk. Protect your Cover Disk as soon as you buy it, by opening the tab and backing it up. It's the only way to be absolutely sure you're safe!

What all this, then? Chris Lloyd guides you through this month's goodies

Cover Disk 28

ON THE DISK THIS MONTH

SIDE 1

MiG-29M SUPER FULCRUM – Zoom around at Mach 2 with this playable demo of Domark's sequel to the Gold winning *MiG-29 Fulcrum*

MOUNTAIN – Create brilliant scenery using all that wonderful fractal stuff

FRACTALS IN GFA – Experiment with the source code for a Mandelbrot generator and win yourself *£100* with our competition on page 37

LSYSTEM – Turn text into pictures using fractal principles

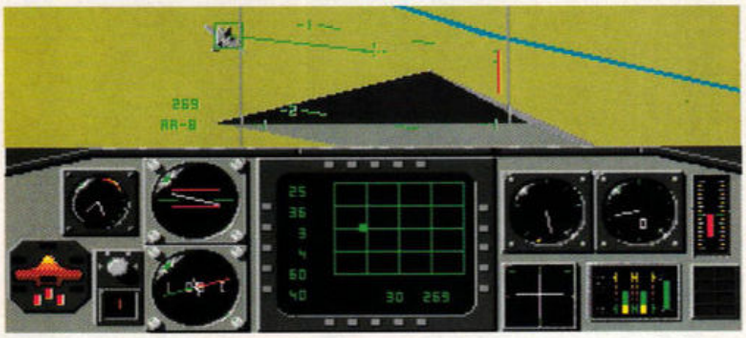
SIDE 2

HOME ACCOUNTS 2 – Keep track of all the money you didn't know you didn't have with this demo of Digita's new accounts package

MOUSE TRICKS – Turbo-charge your rodent with this essential utility

MiG-29M Super Fulcrum

BY: DOMARK
SIDE: 1
MACHINE: ALL COLOUR STs (see note)
RESOLUTION: LOW ONLY
FOLDER: MIG29II
FILES: MIG29II.TOS, FOLDERS STE_MIGII, D, DG, AND DS
GET STARTED WITH: MIG29II.TOS



● No time the read the mag you found in the back seat – that green box highlights an enemy plane. Let the yankee imperialist have a taste of socialist freedom, comrade!

Get ready to don your flying helmet and see if you're made of the right stuff with this playable demo of the latest flight sim from Domark. *MiG-29M Super Fulcrum* straps you into the hot seat of one of the Soviet's most deadly bits of aerial machinery. This baby gave NATO quite a shock. Now you get the chance to try it out for yourself. What are you waiting for? Open up the MIG29II folder and double-click on MIG29II.TOS.

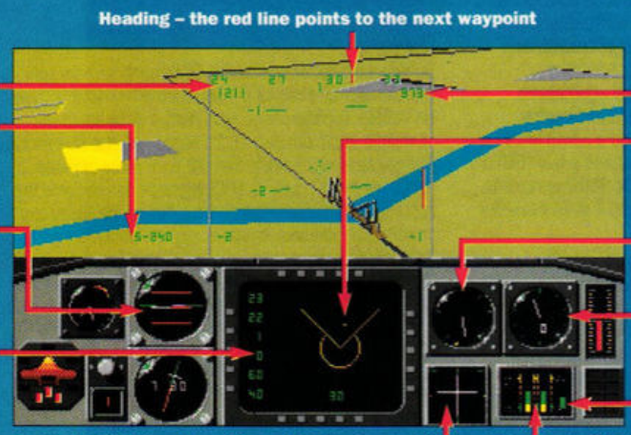
Despite all the buttons to press, getting going is dead easy. Click on the little red plane and you appear on the runway ready to soar through the big blue. Select the control method first, or otherwise you just zoom off the end of the runway. Hit "0" from the main keyboard to set the throttle to maximum and "w" to release the wheel brakes and off you go. When you've built up a bit of speed pull back on the stick and watch the ground disappear below you.

An enemy runway is already set up as your first waypiont, so steer towards the little red line at the top of your Head-Up Display (HUD). Pretty soon a enemy plane appears to try and spoil the fun. Get ready with your AA-8s! Still airborne? Good stuff! Now go for that airbase with your AS-7s. Line the plane up in a gentle dive – not too fast – give yourself plenty of time. Use the <Return> key to the select the targets and let the suckers have it. Still here? Maybe you have got it after all!

Good flying requires a gentle touch. Wrenching the stick around soon has you spinning around uncontrollably, so easy does it. It takes a while to master – after all, it takes a real pilot years. Luckily *MiG-29M* isn't one of those

MAYDAY! MAYDAY! HOW DO I FLY THIS THING?

Before you do your Douglas Bader act, get the hang of what all the screen icons mean. They might not keep you in the air but at least they make some interesting viewing when things go horribly wrong



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Mouse Tricks

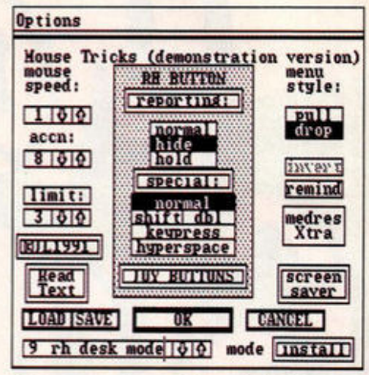
BY: JONATHAN LAWRENCE
SIDE: 2
MACHINE: ALL STs
RESOLUTION: ALL RESOLUTIONS
FOLDER: MOUSETRX
FILES: MSETRX2.ACC in folder with 25 other files
TO GET STARTED: read on!

The standard Atari mouse gets a bit of stick – it does the job all right but is rather sluggish. There are plenty of alternatives on the market that offer higher resolution – that is, mouse responsiveness; nothing to do with screen resolution – but using *Mouse Tricks* can increase your resolution and do a whole lot more besides.

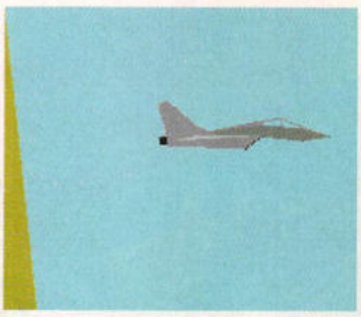
Mouse Tricks is a Desk Accessory, which means it needs to be located in the root directory of your boot disk – that is, not inside any folders. Format a fresh blank disk. Then open up the MOUSETRIX folder on the Cover Disk and copy the contents to your new disk – don't copy the folder itself. Now boot your ST with this disk and move the mouse around. Speedy or what?

With *Mouse Tricks* you have complete control over mouse movement and menus, as well as a screen saver and text reading utility. In this version the special effects only last 20 minutes, but all other functions are there. Menus can be instantly accessed by pressing the right mouse button or can be turned into pull-down ones, you can adjust the mouse speed and acceleration and assign various effects to the right mouse button. Settings can be saved and loaded. You can even assign different settings to different programs so the mouse is automatically set up as you what it when you load your program – a fast mouse for a word processor, a slower one for an art package.

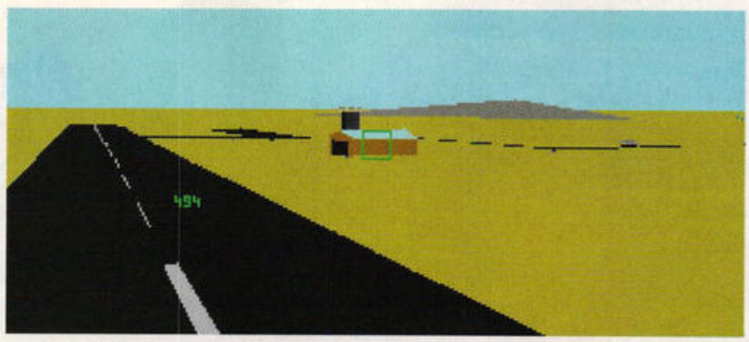
Full details are in the MSETRIX2.TXT file on the Disk. To read this, simply double-click on the file when you're on the Desktop and a dialogue box appears. Select SHOW. To send it to a printer, make sure you have a printer connected (no, really) and select PRINT.



● **Turn your mouse into a right little mover with all sorts of *Mouse Tricks* up its sleeve. You can customise almost all aspects of this powerful Accessory and save your setup to disk.**



● **The MiG is one of the few planes with the raw power for a vertical climb. With practice you can really chuck it about.**



● ***MiG-29M* has a wide range of external view options. Here we are strapped to the front of an AS-7 missile. See that hangar up front? It's dead meat, mate!**

impossible sims that has you hurtling toward the ground if you touch the stick too hard.

Once you're in stable flight try pressing "v" for an outside view and use the numbers on the keypad to get different views of your sleek machine and watch the world go by.

This demo has been cut down to fit on our Cover Disk. The full version promises to include loads more targets and enemy planes for you to blast away at, as well as strategic planning of war tactics. At Mach 2, the game should make it in time, so watch out for a full review in next month's I-didn't-know-there-was-so-much-in-it *ST FORMAT*.

IMPORTANT NOTE TO 520STE OWNERS

Because of technical difficulties beyond our control, this demo won't run directly from the Cover Disk on 520STEs – but don't panic, because we've got a solution. If you have a 520STE, here's what you need to do. First, open up the MIG29II folder on the Cover Disk and copy all the contents to the root directory of a freshly-formatted blank disk – that is, do not put them into any other folders. Keep your new disk in the drive and locate the folder called STE-MIG. Highlight that folder and click on "Show Info" from the "File" menu, then change the folder's name to AUTO. Now reset your ST with this disk in the drive. The demo should work perfectly. (If you're not sure what to do, read the DOC file – double-click on it and select SHOW.)

AND WHAT DOES THIS BUTTON DO, CAPTAIN?

FLIGHT CONTROLS
Engine off and on – "e"
Set throttle – "4" to 0" on main keyboard
Throttle up – "+" key on main keyboard
Throttle down – "–" key on main keyboard
Max throttle – <Shift>"+" on main keyboard
Min throttel – <Shift>"–" on main keyboard
Emergency eject – <Control>"e" (Come back, you coward)
Wheel brakes – "B"
Landing gear up and down – "L"

SELECT CONTROL METHOD
Joystick – <Control>"j"
Keyboard – <Control>"k"
Mouse – <Control>"m"

KEYBOARD COMMANDS
Left – left arrow
Right – right arrow
Pitch up – down arrow
Pitch down – up arrow

WEAPONS SYSTEMS
Cannon – always available. Press joystick "Fire" button, left mouse button or <Delete> key, depending on control method
Select weapon – <Backspace> This cycles through your available weapons: S-240 unguided rockets, AA-8 air-to-air missiles and AS-7 air-to-surface missiles.
Select target – <Return> cycles through available targets for selected weapon
Fire selected weapon – Spacebar or right mouse button
Drop flares – "f"
Drop chaff – "c"

VIEWS
Outside view – "v"
View from control tower – "t"
Missile view – "m"
Forward with head down display – "8" from keypad
Forward without head down display – "5" from keypad
Forward right – "9" from keypad
Right – "6" from keypad
Rear right – "3" from keypad
Rear – "2" from keypad
Rear left – "1" from keypad
Left – "4" from keypad
Forward left – "7" from keypad

OTHER OPTIONS
Cycle through waypoints – ";"
All sound on/off – "q"
Engine sound on/off – "n"
Radar mode – "]"
Head-Up Display on/off – "h"
Autopilot – "a"

Home Accounts 2

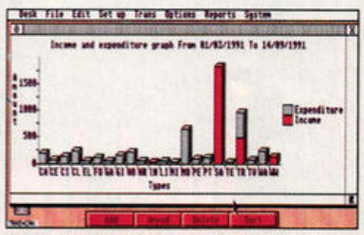
BY: DIGITA INTERNATIONAL
SIDE: 2
MACHINE: ALL STs
RESOLUTION: MEDIUM & HIGH RES
FOLDER: ACCOUNTS
FILES: HOMEACC2.PRG, READ.ME PLUS 15 DATA FILES
GET STARTED WITH: HOMEACC2.PRG,

WIN A 40MByte hard drive worth £325! with this program SEE PAGE 109

Home Accounts 2 from Digita is a comprehensive package to keep track of all your finances – turn to pages 107 and 109 for details of what it can do. This demo offers a taste of the exhaustive range of features – the only thing missing is the "Save" function.

Open up the Side 2 folder and the ACCOUNTS folder and double-click on HOMEACC2.PRG. There are quite a few data files to load, so it takes a while. First you're asked for the time and date – just type in the date and press <Return>, then the time and click on OK with the mouse.

On the Disk is a complete set of sample data for you to experiment with. Select "Open" from the file menu, select MARRIED.HA2 and click on OK to load it in. You can now experiment with all the icons and features. It looks a bit daunting at first but there is extensive help available from within the program – just double-click on the help icon or select help from the menu, then choose the topic you want to know about.



● **"Easy come, easy go." The full damage to your bank account as a bar chart.**

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Magic Storybook

Available from September 14th for Atari/Amiga

Magic Storybook makes creating stories and animating with sound fun by encouraging children to express their own creative ability.

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SOFT STUFF SOFTWARE

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FRACTALS

Mountain

BY: MATT McIRVIN
SIDE: 1
MACHINE: ALL COLOUR STs
RESOLUTION: LOW ONLY
FOLDER: MOUNTAIN
FILES: MOUNTAIN.PRG, PLAYBACK-.PRG, MOUNTAIN.RSC, MOUNTAIN.PI1, MOUNTAIN.TXT
GET STARTED WITH: MOUNTAIN.PRG

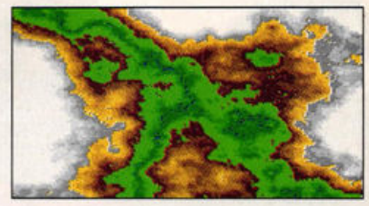
Mountain uses the principles of fractal mathematics to create amazingly lifelike views of mountain scenery. Just as a tiny blob of DNA holds the code to create a human, a mathematical formula can be used to recreate realistic scenery. The program uses some real propeller-head-type maths and the results are stunning. It's fully menu-driven and there are loads of options to play with – mountains can be raised and lowered, valleys flooded and colours altered. Play God in your own fractal world! The final masterpiece can be saved as a *Degas* picture file, and you can even create animations.

Your first step is to generate the basic data. Select the "random seed" option from the "Make" menu, then set the fractal dimension. This ranges from two to three: two gives smooth mountains, and the nearer to three you get the more chaotic they become – real mountains have a dimension around 2.15.

Next, "pin" the front edge – this stops you getting any cross-sections in the picture. Now select "Make" and have a quick cup of tea. This is the dead complex bit – but luckily your ST does all the hard work, and it takes about three minutes. Set the horizon from the "Mod" menu to about 150 and select "Fancy" from from the "Show" menu – and voila! A fractal world!

With this raw data, you can now experiment with all the options from the "Mod" menu. Try raising the water level or changing the colours. You can tinker to your heart's content without ever repeating yourself. For comprehensive documentation see the MOUNTAIN.DOC file, and turn to page 34 for a full guide.

● **A fractal generated range of mountains. Coming soon: fractal generated games and captions! Here's one I prepared earlier: *sjfhnra ivjh vih ijh.* This chaos stuff is great!**



● **A bird's eye view of the world. Reminds me of – er, well, stick a pin in the atlas – the closeness to nature is uncanny!**

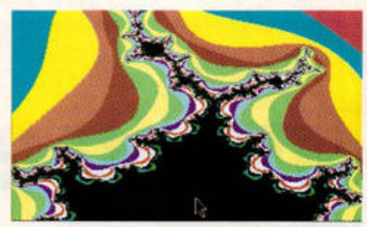
Fractals in *GFA Basic*

BY: KEVIN THOMAS
SIDE: 2
MACHINE: ALL STs
RESOLUTION: ALL RESOLUTIONS
FOLDER: GFAFRACT
FILES: FRACTA.BAS, FRACTA.DOC
TO GET STARTED: Load into *GFA Basic*

Fractals in GFA is the source code for a fractal generator. If you know a little about programming (or fancy playing around with it anyway – on a backup of the Cover Disk, of course), you can not only generate pictures, but you can mess about with the code and see how it's all done. To use it, you need *GFA Basic*. The full version of *GFA Basic 2* was yours on ST Format Cover Disk 19 – see page 130 for back issues if you missed out.

Using this code you can produce Mandelbrot and Julia sets and zoom in on any part. If you know what you're doing the parameters can be entered directly – minimum and maximum, real and imaginary numbers. Consult this issue's special feature on fractals, starting on page 34, for details of the theory. Makes my head spin, but the results are hypnotic flowing patterns.

The program is GEM-based and uses drop-down menus. Drawing is respectably fast too. Select which type of set you want and click on "Draw" – couldn't be easier. If you fancy yourself a bit of a whizz, have a go at adding features. Go on – dare you! (But make sure you use a backup, not the original Cover Disk!)



● **Interesting fractal fact number 9: you can zoom in on the picture for ever and get the same pattern repeating. (Well, technically, it's called "self-similarity.") With *GFA Fractals* you can see exactly how it's all done.**

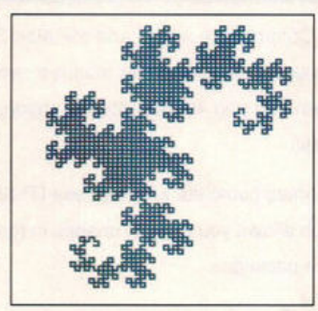
LSystem

BY: MARK KIMBALL
SIDE: 1
MACHINE: ALL STs
RESOLUTION: ALL RESOLUTIONS
FOLDER: LSYSTEM
FILES: LSYSTEM.PRG, LSYSTEM-.DOC and 11 example .TXT FILES
GET STARTED WITH: LSYSTEM.PRG

LSystem is another piece of fractal magic. It's based on Aristid Lindenmayer's string rewriting system, hence *LSystem*. The program takes an input string and alters it according to a set of transformation rules. The characters represent commands to a "turtle," based on the LOGO turtle graphics concept, which draws the fractal.

The program works in all resolutions, the higher the better. Load in some of the examples and have a look. They vary from classic fractal patterns to organic-looking plants.

You need a text editor to create your own fractal examples – *ST Writer Elite* from last month's Cover Disk is ideal for this purpose (and if you missed it, turn to page 130 immediately).



● **Rorschach ink blot test number two: just lie back and relax and tell me what this reminds you of. Complex patterns generated from a simple set of rules.**

BACK UP YOUR DISK!

Because the *ST FORMAT* Cover Disk is non-standard, the back-up procedure is not simple. Follow these steps, though, and you won't encounter any problems. Do it any other way and you could mangle your Cover Disk. And then where would you be?

1. Format a couple of blank disks (you may not get all the data onto one) – single-sided if you've got a single-sided drive, double-sided if you have a double-sided drive.

2. Write-protect (notch open) the original Cover Disk and insert it into the drive (if you have two drives, you lucky devil, insert the Cover Disk into drive B). Double-click on the drive B icon to open a window showing the Cover Disk contents. If you haven't got a second drive, a message appears requesting you to put disk B in drive A. Simply click on OK and carry on with this procedure.

3. Insert one of the blank formatted disks into drive A (removing the Cover Disk if you have only one drive). Double-click on the drive A icon and open up another window. You may be asked to insert disk A in drive A – you already have, so just click on OK again.

4. Highlight each folder in the drive B Cover Disk window and drag them into the drive A window, one at a time.

5. If you have one drive, you're asked to insert disk A and disk B at regular intervals. Don't mix the two up! Disk B is the Cover Disk and disk A is the freshly formatted disk.

6. When you get a "disk full" error message, recopy the incomplete folder and any subsequent folders onto the second freshly formatted disk, using steps 3 and 4 above.

7. Double-sided owners, double-click on SIDE_2 once you've finished copying all the folders from side 1 of the Cover Disk. Copy the folders inside as you did in steps 3 and 4. When it's finished, use only the backup. Put your Cover Disk away safely.

8. Don't forget, you must not try to use the standard Atari disk copy function (dragging Floppy A onto Floppy B) to back up your Cover Disk – because of our special format, it won't work.

FAULTY DISK?

Oh dear, it hasn't gone wrong, has it? We duplicate so many and so few fall over, but it's still annoying when they do. If you're unlucky, sorry. You're guaranteed a free replacement if you send your faulty Cover Disk, with an SAE, to: *ST FORMAT* November Disk Returns, Discopy Labs plc, Unit A, West March, London Road, Daventry NN4 4SA.

Sorry – only Discopy can help you. We're afraid we have no spare Cover Disks ourselves.

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Losing control? Everything seem like chaos? You need...

COVER DISK HOTLINE 0225 442244

WEDNESDAYS (2pm to 6pm)

Having trouble with your Cover Disk? This is what to do. First, before you try anything else, please make sure you have thoroughly read all the relevant parts of these Cover Disk pages and all documentation files on the Disk. If that doesn't solve your problem, try consulting your Atari ST Owner's Manual, which may help you find what you're doing wrong.

If all else fails, give us a buzz in the *ST FORMAT* offices during the hours specified and we'll do our best to help. However, we don't write the Cover Disk programs ourselves, so we may not know everything the programmers do. Try to have your ST nearby (up and running), and let us know which model ST you have, plus the issue number of the Cover Disk that's giving you hassle. Do this before you call, and it might save you a large phone bill when we go tell you to go back and find out! And please: Cover Disk problems *only*.

THE COVER DISK NEEDS *YOU*

We need *your* software – games, utilities, demos – anything good, original and short. If you've written anything worthy of the *ST FORMAT* Cover Disk , send it with this form and full documentation to: Chris Lloyd, *ST FORMAT* Cover Disk Editor, 30 Monmouth St, Bath, Avon BA1 2BW. Then please be patient – we get heaps of submissions, and we try to give them all a fair testing!

Name _____

Address _____

_____

Daytime phone _____

Program title _____

Size of files in K _____

So why's it so flipping smart? _____

_____

_____

Don't forget to: ■ Include on-disk and paper documentation ■ Write your name and address on the disk ■ Use a virus-free disk ■ Keep a copy of your program, because contributions are non-returnable ■ Enclose wads of cash

Please sign the following declaration: This program is submitted for publication in *ST FORMAT*. It is wholly my own work and I hereby agree to indemnify Future Publishing against any legal action should copyright problems arise.

Signed _____

WHAT'S UP, DOC? READING DOCUMENTATION FILES

Included in some of the folders on the Cover Disk there's a documentation file containing notes from the programmer, or an upgrade/contributions address, or operational hints and tips. These are always worth reading, or printing out if you have a printer, because *FORMAT's* Cover Disk pages often skimp on the highly-detailed aspects of a complex program, especially if there are DOCs present on the Disk.

Documentation files are usually named something like README.DOC or PROGNAME.TXT. To read them just double-click on the file icon and you see a dialogue window appear. This says something like "You can only show or print this document." Click on SHOW and your ST displays the file on-screen. (This is usually more readable in medium or high resolution, even if the program runs in another resolution.)

Click on PRINT and your ST sends the file to a printer – if there's a printer connected and set up correctly. Be careful that you don't click on this if you don't have a printer, or you may cause your ST to "hang up."

ST MouseStick: The Ratings say it all!

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For sophisticated simulation enthusiasts and those who want to get the most out of their ST, **Advanced Gravis** brings you the **PERFECT controller.** It feels like you are in the cockpit with programs like Proflight, F19, Mig29, Falcon, Indy 500 etc.

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The **Gravis MouseStick** is one of the most technologically advanced and durable input devices available.

But don't worry. You can handle it.

ST Format Ratings 90%

Features 95%
More modes than a kitchen blender

Speed 96%
More responsive than a joystick and more precise than a mouse

Results 98%
Flawless! No compatibility problems, no quirks, just total control.

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What will you cha

FORMULA ONE

GRAND PRIX

Have you ever wondered what it would be like to be one of those 26 drivers, revving on the grid, waiting for the Green light to start you off on a mayhem of crashing gears, smoke, roaring engines and burning rubber as the Grand Prix season races off into another year? Well, now you can strap on your seat belt! MicroProse and Geoff Crammond, the author of 'Revs' and 'Stunt Car Racer', have teamed up to engineer the only complete Formula One Grand Prix simulation.

MicroProse Grand Prix is crammed full of features: 16 undulating 3D circuits from the street tracks of Phoenix and Adelaide to the glamorous Monaco harbourside and the choice of 26 independently controlled cars out of the current teams; from Jordan and Brabham to Williams and Ferrari.

Study the circuit in practice, adjust your car to achieve peak performance, then roar away for your fastest qualifying lap time to put you ahead of your rivals on the starting grid. Overtake the other cars by slipstreaming or outbraking them into corners, then watch them in your wing mirrors as they try to catch you. Be careful, you might have to avoid a shunt that's just happened around the next bend. It's tough, it's challenging, it's exciting, it's the most realistic Grand Prix simulation ever.

- Authentic cockpit controls with radio and adjustable wing mirrors.
- Realistic tyre and brake wear; judge when to make that vital pit stop.
- View the racing action from television cameras located all over every track and replay your greatest triumphs and worst disasters.
- Unpredictable weather patterns; the race may start dry but a sudden cloud burst may force you to change your tyres and style of driving.
- Four levels of difficulty, from novice to potential Champion, make this a challenge to all drivers.
- From the back of the starting grid to World Champion, MicroProse Formula One Grand Prix, it's all there bar the shouting!

Formula One Grand Prix will be thundering into all good software stores soon for your Commodore Amiga, Atari ST and IBM PC & Compatibles.

MicroProse Simulation Software is available at all good software stores. If you experience difficulty in obtaining any of the MicroProse titles they can be ordered directly from us at MicroProse, Unit 1, Hampton Road Industrial Estate, Tetbury, Glos. GL8 8LD. Tel: 0666 504326

MicroProse Simulation software -Y

COMMODORE AMIGA AND ATARI ST SCREEN SHOTS SHOWN. ACTUAL SHOTS MAY VARY BY FORMAT.

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nge into tonight?

MICROPROSE

GOLF

Computer owners who like golf have been fortunate to have a wide range of games to choose from. Now, with MicroProse Golf, they've also got the definitive simulation. If you've been playing around, stop; and start playing a proper round.

MicroProse Golf accurately recreates the fairways and greens of each hole using stunning 3-dimensional technology which allows you to travel anywhere around the course. You can even follow the ball as it flies through the air and watch from numerous selectable TV viewing positions.

Accurately modelled club and ball dynamics take account of club selection, ball and foot position and swing, with varying course conditions adding to the huge range of effects that you can witness at first hand. MicroProse Golf is so true to life that it will actually improve your own golf game!

- Realistic 3-D landscape allows you free movement around the whole course.
- Animated "Televisual" presentation and camera positions, including a unique follow-the-ball option.
- Six challenging courses, each in a different style, including 'links', 'woodland' and 'water' courses.
- Options to change stance, swing, tee and ball positions and see their effects on your shots before, during and after each stroke.
- Varying ground and atmospheric conditions.
- Player profiles which change over time, including a full handicap system.
- A dozen game types including strokeplay, matchplay, best ball, skins and a full tournament option for 1 to 4 human players.
- Customizable computer opponents and replay facilities.
- Statistical and graphical hole-by-hole analysis of your performance.
- Easy to learn tutorial and 150 page manual packed with hints and tips to help your own game.

MicroProse Golf will be teeing-off soon at all good software stores for your Commodore Amiga, Atari ST and IBM PC & Compatibles.

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PFM PLUS handles Credit and Debit - Weekly, 4 Weekly Monthly, Quarterly, Yearly and even complicated regular payments like 12 payments of £52.99 followed by one of £12.50, PFM will check the date and automatically insert standing orders as they become due.

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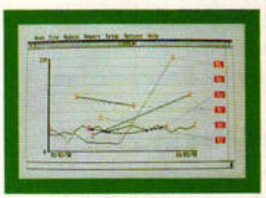
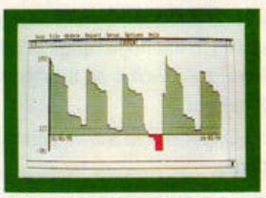
If you're the type that likes to look ahead then PFM allows you to set budgets for both expenditure and income. Up to 28 budgets can be set over a year, a quarter or a month and then displayed either in figures or as a bar graph for a given period. Income/Expenditure for these budgets can also be shown as a pie chart so you can tell at a glance where your money's gone. PFM also allows you to display or print your budget groups selectively so you can see your expenditure quickly and easily.

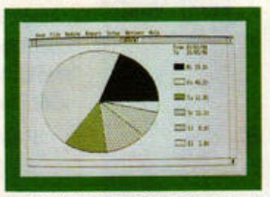
MAIN ACCOUNT SCREEN



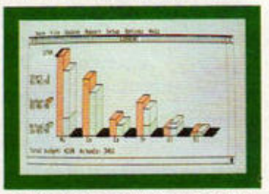
TREND GRAPH



BALANCE PLOT GRAPH



BUDGET PIE CHART



BUDGET COMPARISION BAR GRAPH

PERSONAL FINANCE PROGRAM BY PETER VEALE

Based on the original highly successful Personal Finance Manager, PFM Plus from Michtron is packed with additional features, improvements and enhancements all designed to give you better control over your money.Take a look at this comprehensive specification.

Multiple Accounts
Each file can hold up to ten accounts, each with its own entries and standing orders. Automatic posting of entries between accounts is under full control of the user.

Automatic Standing Orders
Standing orders can be set up for each separate account. Start and end dates can be specified, with payment periods of weekly, 4 weekly, monthly, quarterly, 6 monthly, yearly, or just a single payment.

Entry Posting
Transactions made on one account can be automatically 'posted' to a second account. PFM Plus displays full details of entry sources and destinations. This feature also applies to standing orders.

Selectable Columns
Up to eight different fields available for account displays. The choice of columns and the order in which they appear can be set by the user. A separate choice is available for statement printouts.

Multiple Views
Up to 5 views of any one window can be displayed at the same time. This allows different parts of the account to be visible through independent scrolling, or copies of graphs to be displayed covering different time periods. A total of 67 windows are defined.

Account Files
Each file contains accounts and standing order entries, budget details and full information on the sizes and positions of all account windows

GEM
Full GEM interface operating in medium resolution colour and high resolution monochrome.

Auto Balance
Automatic account balancing against statement. Facility to continue search for further balance matches.

Upgrading from PFM
PFM Plus includes a utility to convert original PFM files to the new format, so you need not lose valuable data by upgrading

Printouts
On-screen displays and printouts for budget comparison tables and account summaries , in addition to the normal statement and standing order printouts.

Printer Formatting
Extensive control over the format of printing statements allowing alternative character pitches, bold underlined and italics printing. Printer control codes defined in separate configuration file.

User Options
Many configuration options can be controlled by the user. Examples include entry defaults, display column order, initial path and data file names. All options including desktop icon positions may be saved to disk.

Desktop
PFM Plus uses its own desktop from which accounts may be selected. The desktop also includes an analog clock and a four function calculator. The calculator can be used even if it is not in the top window. Desktop icons can be re-arranged as required.

Graphs
Four different types of graph plot are available. A balance plot, a pie chart showing selected budget categories, a budget comparison bar chart and a trend graph. The trend graph can be used to show long term increases or decreases in your bills. All graphs auto-scale to fit window size.

Search
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Most mouse and menu operations can also be selected by a key stroke.

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* Automatically places entries in date order
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* Balance of account graph
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Previews

We apologise profusely. We're really, really sorry. It'll never happen again. It was a silly mistake anyone could have made. Can you ever forgive us? What fools we've been. And now, Previews...

EEE! EH? Electronic Arts, the company with more subsidiaries and labels than Robert Maxwell and Rupert Murdoch combined, are a strange lot. Sometimes they come out with world-beating stonkers which other publishers would give several of their bodily organs to own (like *Populous 1 and 2*), and sometimes with huge flops *(Chuck Yeager's AFT)*. Still, they're so eclectic that you can generally rely on them to come up with at least two or three good games a year. Now they've signed with American company Three-Sixty to bring three of their games to the ST – two war games and a sports sim.

Patriot is a standard map-view icon-driven wargame. It's based heavily on the systems used by conventional paper wargame publishers GDW and comes with the usual claims about the graphics, the sound, the interface and the Artificial Intelligence all being better than any other wargame ever in the entire universe. There are 20 scenarios (or "BattleSets" as Three-Sixty insist on calling them) and the flexibility to command at a Major General or a Company level, for complete control over your cannon-fodder – sorry, your troops.

The other wargame is in a completely different style. *Theatre of War* looks more like a weird game of chess in 3D than a wargame as you view the action on a 3D-filled polygon environment which is almost like a simplified version of *Virus*. This, EA hope, will shake off the wargame's "squares on graph paper" image and bring it bang up to date. Your weapons are a mixture of primitive and modern designs, so you can be fighting with a Patriot missile against someone with a bow and arrow (like *Mega Lo Mania*, perhaps?). Multiple camera views are available too, as is a terrain editor.

The third release is the unfeasibly long-titled *ABC Sports 1992 Winter Sports Games*. As you might possibly have guessed, this is a simulation of the 1992 Winter Olympics to be held in France. The Winter Olympics generally provide more interesting sports than the summer equivalent, particularly for simulations. The names are certainly more interesting: bobsled, luge, downhill, bi-athlon and slalom. (What is a luge anyway?) The events are all shown in filled 3D from a first-person perspective and use topographical maps provided by the real-life course designers.

All three games should be ready by spring/summer 1992, barring plagues, earthquakes and Editors.

● **"Now listen, men, here's the plan. We'll make the screenshot of *Patriot* look so damn involved and complicated, with hundreds of arrows and icons, that no-one will know what the hell is going on and we'll impress the hell out of everyone. Savvy?"**

● **My essay on *Theatre of War: Theatre of War* is, er, a game, with some, um, people and other things, played on this sort of patchwork-hill affair, with lightning and stuff, and probably lots more going on in there. Um, that's all. No really, that's it. There is no more.**

● ***ABC Sports 1992 Winter Sports Games* Instructions: All you have to do is stand at the top, lean forward slightly and wait until you get to the bottom. It's the same with the bobsled, the luge, the downhill, the bi-athlon and the slalom, only with some bits different. See?**

● **A pleasant stroll through the sunlit woods in search of apples and arrows turns into a nightmare orgy of blood and guts when you come across The Knight With No Name (Except This One) in *Obitus*. (I could write press releases any day.)**

FIRST AMONG SEQUELS

Psygnosis, those strangely-monikered Liverpudlian tykes, have three major ST releases set for Christmas: *Shadow of the Beast 2*, *Obitus* and *Barbarian 2*.

Shadow of the Beast 2, to put it bluntly, is a re-run of the first game. Unfortunately the graphics have lost some of their – ahem – sparkle during conversion and the scrolling is less than perfect. Still, it may appeal to beat-'em-up fans with a penchant for sequels.

Despite its funereal title, *Obitus* has nowt to do with death or dying (much). It's an adventure/hack-'n'-slash/arcade affair. The first section is a maze, set in a forest, where you can pick up your weapons, rings, apples and such like, and boasts some quite stunning graphics. Complete this bit and you're onto a horizontally-scrolling beat-'em-up with slightly less impressive visuals. Next comes an "explore the castle" section, another maze bit which has you running about the semi-3D rooms. And so on over four larger sections.

Another sequel is *Barbarian 2* – not to be confused with Palace's game of the same name; this is in fact the follow-up to the much older Psygnosis *Barbarian*. Again, this is an expanded version of the original, with larger levels, many more monsters and shops.

All three games are due by Christmas. Tragically, though, the eagerly-awaited *Lemmings Data Disk* is now unlikely to be available before January.

TRAVELLERS' TIPS

***MegaTraveller* is back!** Back! *Back!* And (we hope) this time it's more of a game and less a set of rules. *MegaTraveller 2* (obligatory subtitle: *Quest for the Ancients)* has been designed and written by the creator of the original *Traveller* universe, Marc Miller. The first game was something of a letdown, promising much but delivering a distinctly average adventure. With the original author behind the wheel, *MegaTrav 2* should be a much more involved and detailed representation of the boardgame.

CREATE! your party. The new character generator gives you 35 careers and 125 skills to choose from.

CONTROL! your party. Although you only control one character at a time, the others in your party (supposedly) respond to your actions according to their personalities.

SEE! the graphics. Er, yes, do, because they're really quite good.

EXPLORE! the worlds. 100 worlds, 500,000 square miles of terrain and not a toilet in sight.

FIGHT! other people. New combat system and many weapons available.

STOP! doing these silly sentences.

MegaTraveller 2 is due for release in December and will be ruthlessly slated/praised to high heaven by us as soon as it's finished.

● **Great Golden Rules of Our Time: never attempt to take a screenshot when you're smashed out of your head. We desperately hope this shot from *MegaTraveller 2* is a terrible mistake, 'cos otherwise it looks as if the game may be a tad difficult to get the hang of.**

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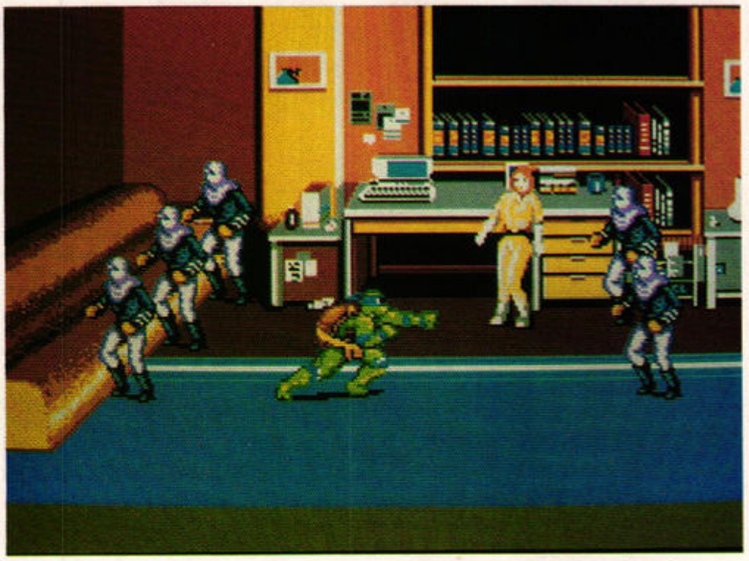

● The story so far: Allopetia, one of the Teenage Totally Pathetic Tortoises, has stumbled across a secret cloning ring somewhere in a downtown office. Fiendish plot or what? Steeling his body against the pain, he begins the ancient and painstaking ritual of Kon-do-Min-lum, or Death by Pointing.

TEENAGE MUTANT NINJA TYCOONS 2 (SANITY 0)

Lean, green and very, very rich. That's those *Teenage Mutant Ninja Turtles* all right after their stint at the top of last Christmas's chart. Despite the critical pounding the game received (*STF* gave it 38% in issue 19) it was still number one for a very long time – Mirrorsoft, the publishers, are even claiming it was the biggest selling game of all time. (Can there really be so many more Turtlemaniacs than discriminating gameplayers out there?) Now Mirrorsoft have managed to grab the licence for the ST version of the follow-up coin-op too, so naturally they're hoping *Turtles 2* will repeat the success of the first.

Plot, of course, is the last thing anyone worries about with a game such as this. It's virtually a rehash of the first, involving such incomprehensible names as Shredder (™), BeBop (®) and Splinter (©). In play, the game is a scrolling beat-'em-up and is supposed to look identical to its parent coin-op. Programming is being handled by the original's creators, Probe Software.

It would be rash at this stage to write the program off before it's even finished – but on the strength of the first it's not likely to be a software classic. Not only that, but Turtle hysteria has decreased considerably since last Christmas. Just at the moment *Terminator 2* is the in thing, so perhaps sales will suffer too. All will be revealed when the game is released in November. ***stf***

THIS SPACE TO LET. MUST BE INVADED SOON

After the *Breakout* revival of a few years ago, it's time for another "golden" oldie to be dug up and mucked about with. *Space Invaders* was the phenomenon that introduced the concept of the arcade game to the public at large, 13 years ago. Now you can relive those golden days of shoving ten pences into the demon machine and blasting hell out of those greenies with *Super Space Invaders* from Domark.

There are, naturally, many improvements to the basic game. Bits have been borrowed from quite a few other games such as *Phoenix*, *Gorf* and *Galaxians*, so that the eponymous aliens don't just mechanically shuffle down the screen, they swoop in huge attack formations. The playfield scrolls in all directions and there are now the standard huge end-of-level guardians. To top it off, there are bonus and secret levels, an intro sequence and power-ups – including HyperLasers, FireFlowers and TimeStops.

True *Invaders* purists will doubtless be horrified by these changes to their precious game, but in truth they should add some modern features to what is, basically, a somewhat boring and predictable game. (Cue the flood of letters chastising us for blasphemy.) You will, of course, need a stock of ten pences to begin with – 250, in fact – but after that it's all free. Watch for it around the end of the month.

● The sun goes down on another perfect day. The birds are tweeting, the dusk is gently falling and the *Super Space Invaders* are stealing the cows from the meadow to take them to an interstellar hell of concrete and BSE inspectors.

IN PRODUCTION

***FORMAT's* regular roundup of all that's new in the ST games world**

● Microprose continue to support the ST in a most heartening way, with a number of releases planned for the rest of the year and early next. ***Advanced Tactical Air Command*** has been designed and programmed by Argonaut Software, who also did *Birds of Prey* (see our preview on page 29). It's the future, the world has been plunged into corruption and violence (as usual) and you're the only person who can save it (also as usual). The game is part flight sim and part strategy, in which you use your team of agents and whizzo hardware to destroy the drug barons who rule everything. *ATAC* is due early next year. Before that, if all goes well, we should see ***Silent Service 2.*** This is the bigger-better-more version of the submarine sim *SS 1*, and pits you against the Japanese in the South Pacific in World War 2. Digitised speech and sound effects, detailed graphics (the enemy ships are digitised pics of the real things) and, oh, *loads* of other stuff are promised for the game which should be out somewhere towards Christmas.

● Digital Integration have been quiet on the ST scene for a while. Now they're about to launch a new label called Dream Factory which is to market all their full-price non-simulation games, the first two of which should be ***Supaplex*** and ***Drift.*** *Supaplex* is a puzzle game with over 100 levels, the plot being that you are a bug hunter who lives in a computer and fixes the bugs. It looks superficially similar to *Chip's Challenge*. ***Drift*** is an RPG/adventure game with 3D views and animated graphics set in the future. (It must be getting pretty crowded there by now.) You control a squad of mercenaries who must complete a number of tasks to make a dishonest day's pay. But the primary DI release, due mid-1992, is ***Tornado,*** a simulator of, unbelievably, the Tornado aircraft, with some very tasty-sounding features. If all goes as planned, *Tornado* could well be *the* simulator release for next year. Expect more details nearer the release date.

● Some updates: ***Sim Earth,*** originally due in the spring of this year, has been heavily delayed because of programming difficulties and now isn't likely to make it onto the ST before Christmas; ***Deuteros*** – Activision's much-awaited and much-delayed magnum opus – should be available by the time you read this but wasn't finished by the time we had to go to press, so won't be reviewed until next month's issue. Sadly, Activision have no immediate plans to release anything else for the ST after *Deuteros*. Finally, the first ***PowerMonger data disk,*** which transforms the game to a World War 1 setting and which was also expected sometime last spring, is now due for release in December. The wait should be worth it though, because, as Peter Molyneux says, "The World War 1 Edition is not simply a graphical change to the original; we have reworked the whole of the program."

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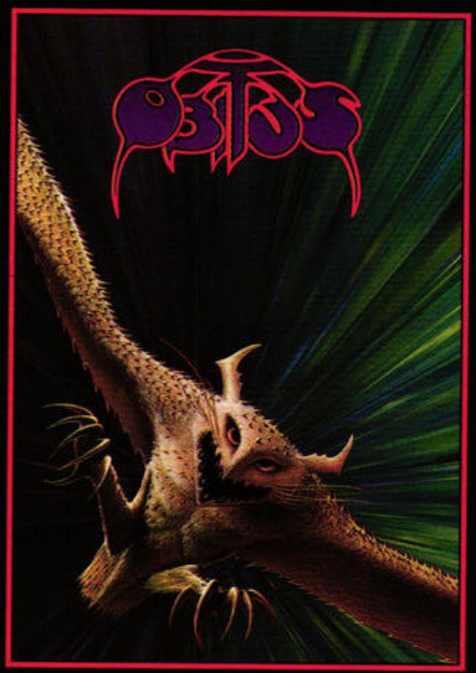

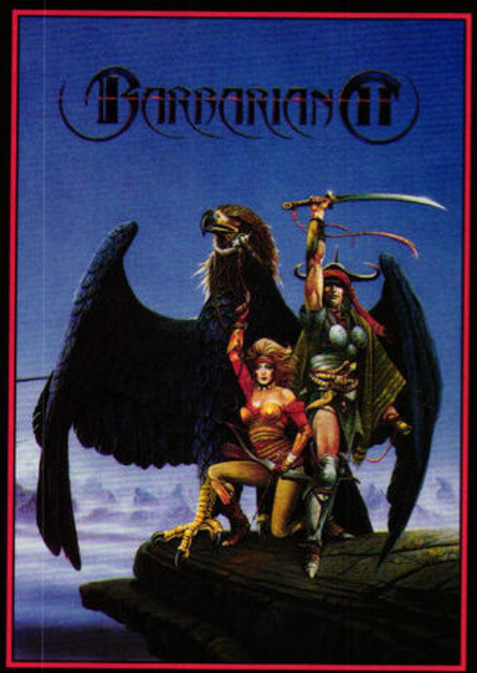

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Atari ST Screen Shot

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Amiga Screen Shot

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Atari ST Screen Shot

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● Unlike most other flight sims, *Birds of Prey* aims for such a level of realism that your ordnance (weaponry to me and you) is displayed for all to see. When you fire off a missile, you see it leave your plane and you're immediately lighter.

● The Argonaut team (left to right): Rick Clucas, Ian Crowther, Giles Goddard, Adam Polanski and *Birds* project manager Chris Humphries.

A long time in the nest

"Let's do a flight sim," said Argonaut Software, little knowing that this aim would plunge them into a four-year-long battle of techie twiddling, light-sourced polygon shading and B-52s. Ed Ricketts finds out why it wasn't just the birds who were preying

Four years ago, Argonaut Software began something they now probably wish they had never started – the programming of a flight simulator called *Hawk*. After a total of ten man-years (er, "programmer-years"?) of work, the game – its name changed to the more familiar *Birds of Prey* – is now almost ready to be released, and Argonaut are hoping it will be "the most comprehensive flight simulator ever."

Argonaut are known for producing games of excellence but taking their time doing it. They've only written three games for the ST – this is the first in four years after the classic spaceflight sim *Starglider 2* (awarded a mammoth 95% rating in *STF's* predecessor magazine *ST Amiga Format*), and the others were the superlative *Starglider 1* and the pretty awful *Afterburner*. It was from writing the *Starglider* games that the idea for *Birds of Prey* evolved. Chris Humphries, member of the Argonaut team and Project Manager for *Birds of Prey*, says: "We thought it was a good idea to use *Starglider* graphics in a flight sim, but put in a game as well."

But just why did it take four years to get the game together? After all, flight simulations aren't exactly blazing new trails in games technology, so the basic routines must have already existed. There were three reasons.

First, the game never had a real objective. Initially, the idea was just to write a flight sim using *Starglider 2* technology – but, as Argonaut expanded, the game concept just grew and grew, and Chris Humphries decided that his flight sim was going to thrash everything else currently on the market.

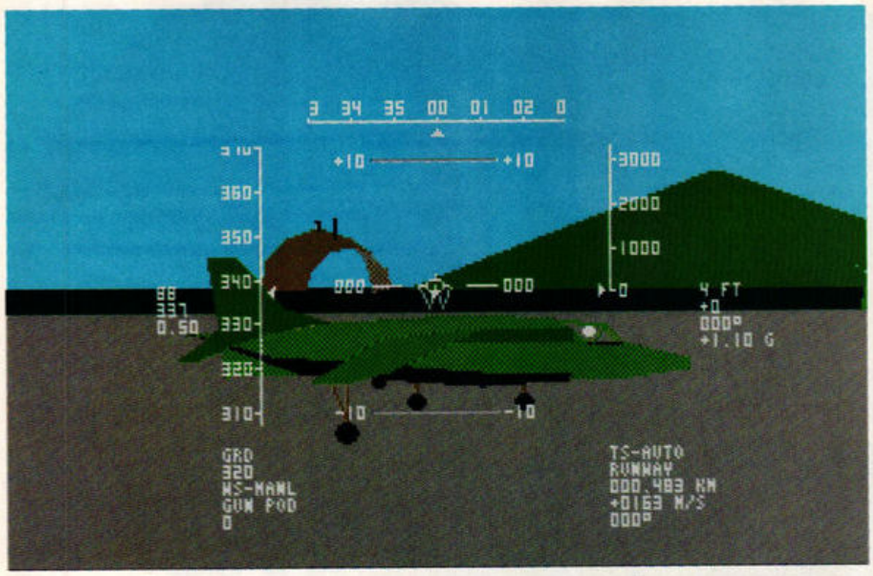
The main reason for the delay, though, lies in the number of craft you can fly. There aren't just three or four – why stay in single figures? There are a total of 40 real-world craft available. And every one of them performs just as it would in real life. The planes range →

"We thought it would be a good idea to use* Starglider *graphics in a flight sim but put in a game as well – resulting in the most comprehensive flight sim ever"

CHRIS HUMPHRIES

● All the super whizzo modern planes are included, but the old favourites are still there. This B-52 has just buzzed a SAM site – probably not the wisest thing to do in such an ancient plane.

● The latest, greatest and altogether strangest planes are included. The Stealth Fighter proudly displays its peculiar but highly effective bodywork in a blatant show of power.



● **Although there's only one cockpit, you still have to deal with the instruments on its HUD. A *Terminator*-style readout informs you of everything you want (and even don't want) to know.**

from older models (the B-52) through the MiG-29 and the Tornado to the Rockwell B1 and F117/A.

This meant that a hell of a lot of research had to be put in to get the planes' data in the first place – aircraft manufacturers aren't the most expansive of people, especially regarding their newer models – and then build it into the flight models of each plane. This data included the craft's physical appearance, its flight characteristics (dynamics, performance and so on), its weapons systems and their capabilities, its radar/warning systems and its likely targets. This hefty mound of data-gathering was in itself a monumental task, but the team then decided to implement strict velocity/ceiling restrictions, too. What this means is that, just as in real life, a craft can fly faster and higher if it has fired off all its missiles or used a lot of fuel, because it is then much lighter.

The third reason for the wait was that the publishers, Electronic Arts, were keen to ensure that the game was (a) good, (b) finished and (c) bug-tested before it was released. Sounds like common sense – but, to some software houses, these considerations are secondary. When you think that *Birds of Prey* was the first game EA signed in Britain, you realise it hasn't been rushed.

Of course, the true test of whether the planes really are realistic is in the flying. Could you fly the real model after having played the game? "Well, you'd know enough so you wouldn't die," is Chris's reply to a somewhat silly question. "To do a perfect simulation you obviously need more than we're working with – the sort of stuff Rediffusion are using *[mainframe flight sims for real pilot training]*. However, they did flight-test the program for us and gave it their seal of approval, so that can't be bad."

Thankfully, you don't have to learn the controls of 40 different cockpits. The cockpit stays the same no matter what plane you're flying, and includes all the necessary instrumentation. The alternative, to include each cockpit, would have taken up far too much room in memory and made learning the game hideously complicated – one cockpit is enough for most people.

In most flight sims, you are given a series of missions which you carry out one after each other until you are killed, which isn't at all realistic. In a real-world war situation, you would constantly be diverted from whatever task was at hand, and this is the case with *Birds of Prey*.

There are 12 mission types but, in effect, these are only bare descriptions of the sort of activity you're expected to carry out. The brief may be to do an "Aerial Interception," a "Bomb Run" or a "Troop Drop," but at any point you may be caught up by continuing developments elsewhere. The enemy and your side are both constantly launching new missions, repairing damaged buildings, moving their forces and behaving just as genuine armies would. So, you may be called upon to aid another mission or take out another target. It's even possible for you to start your own private war – by buzzing a dormant enemy airstrip, for instance, and harassing the other side into attacking you.

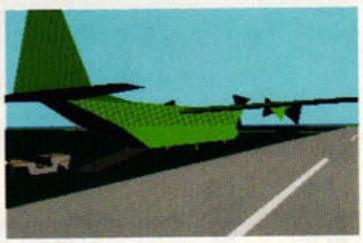
To avoid political bias, the participating nations are never actually named. What's more, the hardware available to the enemy depends upon which aircraft you choose to fly. It would be a little unfair, for instance, if you were flying a B-52 and the enemy had fleets of F117/As ranged against you.

This realism brings an element of unpredictability to the game. You can't depend on the airstrip you've just bombed staying out of action for long, because, in time, it's sure to be repaired and rearmed. You may be heading for a target, only to find it's already packed up and moved on elsewhere.

Real time affects the natural elements, too. The sun goes up and down, the constellations move just as they actually do, and every object is light-source shaded. As the sun moves around the sky, shadows change and planes are shaded differently. If you view your plane with the sun behind it, it appears as a silhouette.

You can view your craft from an almost infinite number of angles – just as you could in *Starglider 2* – by altering the viewpoint yourself in real time. Any other active plane, yours or the enemy's, can also be checked upon. So, if you're feeling really nasty, you can pinpoint one poor pilot and follow him everywhere. The graphics of your plane change as you use your ordnance (weaponry). Fire off a missile and you can watch it disappear to its target – leaving you with one missile less on your undercarriage. Again, it sounds like an obvious touch, but most flight sims don't even show missiles on your plane in the first place.

The frame rate is variable, but is usually around five to ten frames a second – enough to be convincing, but a tenth to a fifth of the maximum display speed. With all the calculations, light-source shading and enemy movement the game has to carry out, this is not an unreasonable speed. Anyway, flight sims have never been the Ferraris of the game world. The game was originally designed to work with 1MByte STs only, but Argonaut hope to release a half meg version: "We didn't think it was fair to do just a one meg only version, since more people seem to have a half meg ST than a one meg." Incredibly, the whole game (heavily compressed) fits onto one disk. Makes you wonder why some games need five or six, doesn't it?

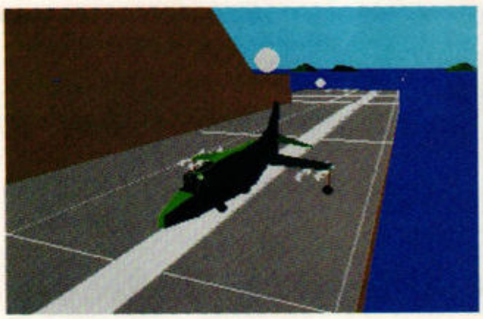


● **One of the mission types is a troop drop behind enemy lines. Nothing too difficult – just make sure you only open the doors when you're near the ground, or it's time to get out the Flash.**

Birds of Prey should make it to the shops in November – in plenty of time for Christmas. Looking unfeasibly far ahead, any sequels or data disks seem unlikely. As Chris puts it: "There's nothing else we can do with the game – it's all in this one program." ***stf***

"To do a perfect flight sim you'd need a mainframe – the sort of stuff Rediffusion use for real pilot training – but they did flight-test the program and give it their seal of approval"

CHRIS HUMPHRIES



● **Impressive landing on an aircraft carrier, you might think. But virtually anyone could do it in a blummin' Harrier – with your eyes closed and one hand tied behind your back, too.**

● **As you can see, aircraft carriers feature quite heavily in *Birds of Prey*. They make useful traps for smartass pilots who try to land and shoot off the other side with a surprised look on their faces.**

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World of Ch

Mandelbrot Sets, Koch Curves, Julia Sets and fractals – they all add up to one thing: chaos! Neil Jackson explains what fractals are all about and shows you how you can use the programs on this issue's Cover Disk to make mountains out of mayhem on your ST

You might think you need a Cray supercomputer, a research budget stretching to thousands of pounds and a degree in maths to explore this strange nether-world. But you'd be wrong. Armed with no more than your ST and a good helping of enthusiasm, you can create stunning Chaos images in almost no time.

To help you, this month's Cover Disk features three special programs – *Mountains* (a fractal landscape creator), *Fractal GFA* (a *GFA Basic* Mandelbrot program) and *Lsystem* (a fractal pattern program). Turn to page 16 for more details. Each deals with a specific aspect of Chaos and shows you that there is, in fact, some kind of order in this confusing but spectacular field of New Age Maths.

CHAOS AND CONFUSION?

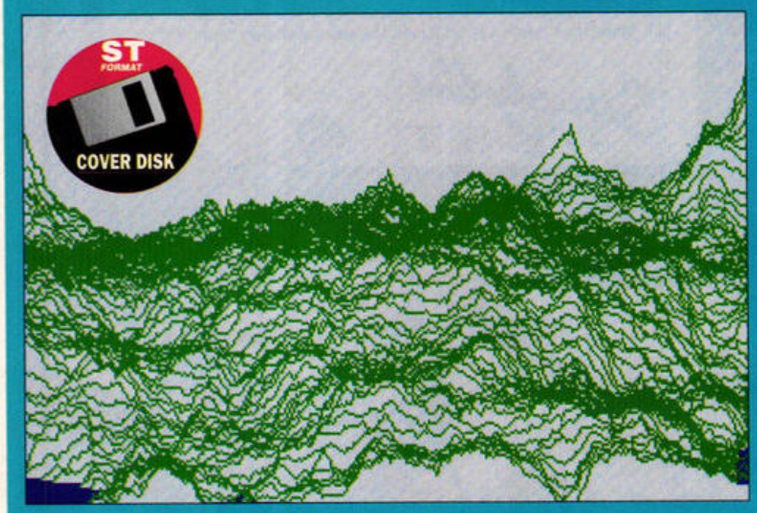
In many cases, scientists experimenting with fractals feed them into their computers to see what they get – and then attempt to explain the results. Why? To find out which fractal numbers can be used to recreate natural chaotic patterns, like the crinkles on a coastline, the movement of winds and rain, or the structure of trees and plants.

But what are they? Fractals (a term first coined by mathematician Benoit Mandelbrot) are just equations that, when graphed onto paper or a screen, produce exotic (and occasionally natural-looking) irregular patterns. Some are curves or surfaces, some are disconnected "dusts" and some just defy description. All have one thing in common – they're built up by repeatedly feeding the data from the equation back into itself, time after time, which is why the ST can do it so easily. This process is known as recursion or re-iteration. The initial fractal equations are usually fairly simple, but the recursion causes strange patterns to be drawn.

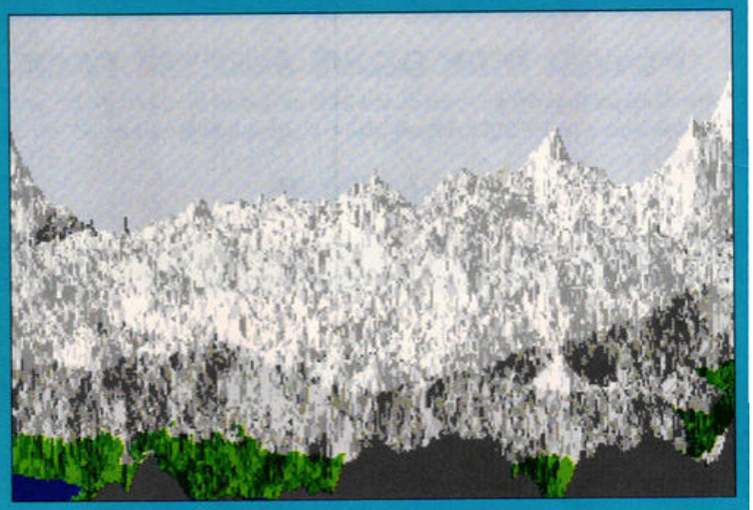
Chaos is part of the world of fractals. Often the patterns generated by fractal equations are con-

Climb every mountain

In the gap between the day-glo chaos images and the high-brow maths lies a range of mountains – fractal mountains. These are perhaps the most exciting aspect of fractals – not because they result from complex theories, or because they are gloriously surreal, but because they look so life-like. You may even have seen fractal landscapes without realising what you were looking at. Many movie special-effects creators use fractal landscapes as backdrops. Some even make them the main event – as in the case of the Genesis



1 When *Mountains* is loaded, select "Random Seed" from the "Make" menu and type in a number. Any number will do – and every number generates a different landscape, so don't be afraid to experiment. After this, select "Make" from the same menu, and wait for about three minutes while the landscape is generated. When the make is complete, select "Quick" from the "Show" menu and a picture is sketchily displayed on-screen, like the one above. If you don't think it'll look too good in full colour, try another number. When you have a basic shape you're happy with, move on to the next step...



2 Okay, so you have a basic landscape, but it doesn't look too convincing – yet. Let's change that now by selecting Alps, Cloudy from the "Palette" menu. Okay, done? Now select "Fancy" from the "Show" menu and watch. The landscape is now drawn in full colour, a process which takes a couple of minutes. When it's finished, you may find that, although the mountains look great, there's nothing particularly realistic about the sky. Before you can change that, you need to save the terrain to disk to avoid having to re-make it. Choose "Save Terrain" from the "File" menu and enter a suitably personal name for the file. Then move on...

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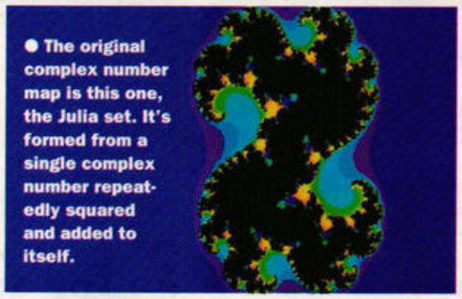
aos

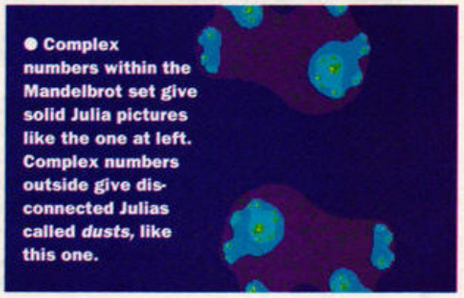
torted, twisted blurs of colour scattered in a seemingly unpredictable fashion. But, in fact, there are logical, strict rules which govern the patterns – rules which are not immediately obvious, but are rigid nonetheless. As a result, the study of Chaos is an exploratory science. All these things seem unpredictable and chaotic, but with the birth of Chaos and fractal science they may soon be as easy to recreate as a circle or a square.

THE ABOMINABLE SNOW MEN

Before Mandelbrot even knew what fractals were he used many much older maths formulas and techniques. He was especially interested in the strange experiments of a 19th century mathematician by the name of Koch. He'd created a mathematical "monster" by drawing an equilateral triangle, and then drawing three smaller triangles (each one-third →



● The original complex number map is this one, the Julia set. It's formed from a single complex number repeatedly squared and added to itself.



● Complex numbers within the Mandelbrot set give solid Julia pictures like the one at left. Complex numbers outside give disconnected Julias called *dusts*, like this one.

GETTING A COMPLEX ABOUT NUMBERS

If you want to play with fractals – especially using the *GFA Basic* program on the Cover Disk (see page 38) – it helps if you know how fractal parameters are calculated.

Most fractal theory depends on the use of complex numbers. These are a mathematical convenience which helps solve certain problems. Complex numbers are written in the form $2+3i$ where 2 is the real part and $3i$ is the imaginary part. But what's an imaginary number?

These arose out of the fact that negative numbers have no square root – there's no number you can multiply by itself to get a negative number. Mathematicians decided to invent an imaginary number, called i, defined as the square root of –1, just to see what they could do with it. Thus the complex number was born.

Complex numbers, as you'd expect, behave rather oddly when compared to real numbers. You can add them quite simply by just adding both halves of the first complex number to the corresponding halves of the second.

Thus: $5+4i$ added to $6+3i$

becomes $11+7i$, which is $(5+6) + (4i+3i)$.

Things get a little more difficult when you try multiplying two complex numbers together – a function required for squaring, which is the basis of most recursive fractal algorithms. To do it, multiply each part of the first complex number by both parts of the second. Then add the four resulting parts together. Thus:

$5+4i$ times $6+3i$

becomes $(5*6) + (5*3i) + (4i*6) + (4i*3i)$

This becomes: $(30) + (15i) + (24i) + (12i^2)$

Because we know i is the square root of –1, i^2 must equal –1. Therefore since $12*-1 = -12$, so $(12i^2) = -12$.

This gives us $30 + 39i + -12$ or $18+39i$.

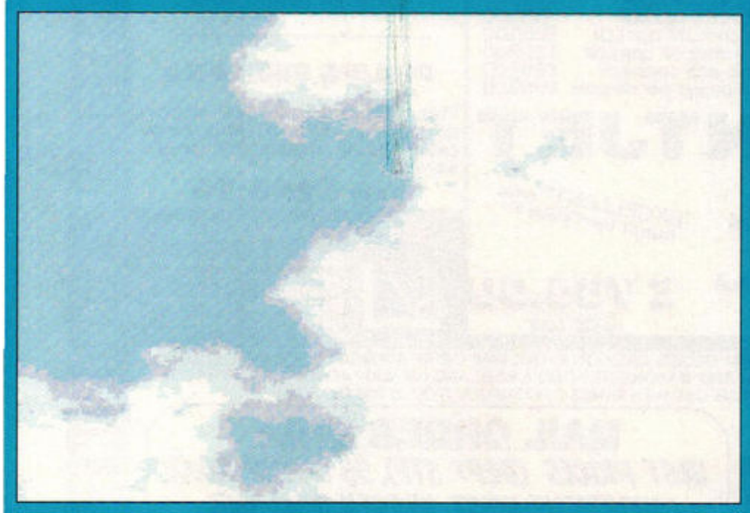
Now you're ready to tackle the *GFA Basic* listings on page 38. Alternatively, try just typing in a few numbers...

sequence in *Star Trek 2: The Wrath of Khan* by Paramount Pictures. This featured a vast, highly-detailed fractal landscape mapped around a globe, complete with fractal explosions.

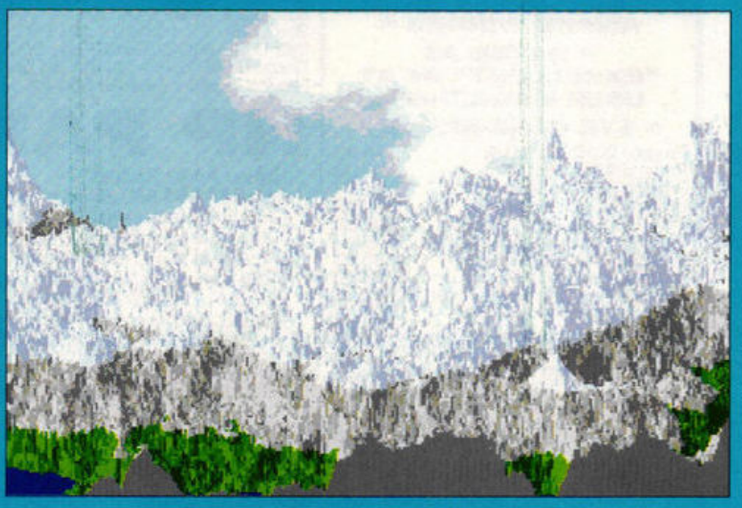
In the movies, fractals are rendered (drawn over a long period of time) by huge supercomputers which can still take hours for a single screen. This is because the fractals needed for movies have to be of an incredibly high resolution and with plenty of colour shades.

But you don't need huge 4,000 pixel by 4,000 pixel displays to make a convincing fractal landscape. You can do it on your own ST, at home in the comfort of your own armchair. And you'll be surprised at just how quickly you can get results – with less colours and pixels, the ST is actually quite fast at generating a reasonably detailed landscape. So what have you got to do?

'S easy! On this issue's Cover Disk you'll find *Mountains*, a fractal landscape generator. Load this up in low resolution (you need a colour monitor), and a world of eerie panoramas awaits you...



3 With your landscape safely preserved you can now experiment with clouds. Use "Cloud" from the "Show" menu to re-map your existing landscape into a misty shape. When it's finished, try to imagine it behind your mountains. Does it look like a cloud? If not, enter a different Random Seed and do another Make and then select "Cloud" again. Any better? Keep doing this until you have something which you think would look good as a backdrop for your mountains. When you've got a goodie, use "Save Picture" from the "File" menu and to save it to disk. Now you've got to mix the land and sky...



4 When your cloud is safely stored away on disk, use "Load Terrain" in the "File" menu to get your landscape back again. Check that your clouds are still in the display buffer by selecting "Look" from the "Show" menu. If they aren't, use "Load Picture" to bring them back. Then re-draw the landscape in front of your clouds by selecting "Fancy Background" from the "Show" menu. The first thing you'll probably notice is that your landscape has spiky, unrealistic mountain-tops, like the picture above. Placing the mountains in front of the clouds highlights this problem, but don't worry, there is a way to fix it...

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smaller) adjacent to the first one, in the shape of a star. He continued to draw smaller and smaller triangles (each one-third smaller again) on every other edge, over and over again. He found that the snowflake pattern he created grew towards a finite size, but never quite reached it, while the number of edges was infinite. No matter how far he zoomed into the pattern, there was always a place for a new set of smaller triangles. Without the aid of an ST, Koch and the other mathematicians of his era gave up, pronouncing the pattern and its equation a "monster."

Mandelbrot, armed with IBM's finest mainframe number-cruncher, could examine the Koch snowflake in ways that Koch never dreamt of. The results of his studies made him look for other "monster" maths patterns like these. He was intrigued by the way that many of these monsters are just simple recursive equations.

CURVACEOUS JULIA

Another of Mandelbrot's targets was Gaston Julia, a French mathematician who experimented with the squaring and addition of complex numbers in the early 20th century. You may remember complex numbers from school if you were unlucky enough to have been subjected to them. They are not simply difficult numbers, like *Pi* or the ever-changing Telecom exchange codes, so check out the panel on page 35 for a quick refresher course if you're confused – but for now it doesn't matter if you don't know what they mean.

Julia took a complex number, squared it, and then added the complex number to the result. He then squared that result and added the complex number again. He did this over and over again, just as Koch did with his triangles. After a time, the result would do one of two things: it would zoom off towards infinity or it would settle and not deviate very much from the previous results. Sadly, Julia was unable to work out why. He just knew (from painful experience) that you couldn't predict what would happen to the numbers before you started recursion – you had to look at the results. He did work out that some complex numbers seemed to be strange – a tiny difference at the start could produce wild, chaotic differences after →

THE CHAOTIC MAP OF MAYHEM

The familiar Mandlebrot set is a graph of complex numbers which are repeatedly passed through the same equation: $z(new)=z(old)^2 - c$
Z is given a starting value of zero and it's first squared, then added to complex number *c*.

This complex number is usually requested by the Mandlebrot pattern-drawing program (page 39) as a range of numbers at the beginning of its operation. The program works out the individual value within your chosen range and passes it to the main equation.

The program then repeatedly runs the equation and checks the results each time it cycles around the loop. If the results start to show a tendency to grow larger and larger towards infinity, then the original constant is not in the set. The program jumps out of the loop and a colour is determined for the pixel to be plotted on screen.

This colour is directly related to the number of loops done before the result shows its tendency towards infinity.

If the looping equation never goes to infinite, or it flutters within a stable range, then the original constant is part of the Mandlebrot set and it gets coloured black.

When the pixel is plotted, the program continues, substituting slightly higher values for the real constants (within the selected range) and does the whole thing over again until a new pixel is plotted. Once an entire line of pixels is finished, the program increases the imaginary constant and resets the real constant to its starting value, before repeating the whole loop yet again.

You can now see why it takes a while to draw the whole set. If, on average, pixels take 30 or so iterations to determine their tendencies, and there are 64,000 pixels on a low res screen, then nearly two million calculations must occur before completion. No wonder you need an ST to do it!

● The Mandelbrot set is actually a graph – each point is a number processed in the equation and its pixel colour is the result.

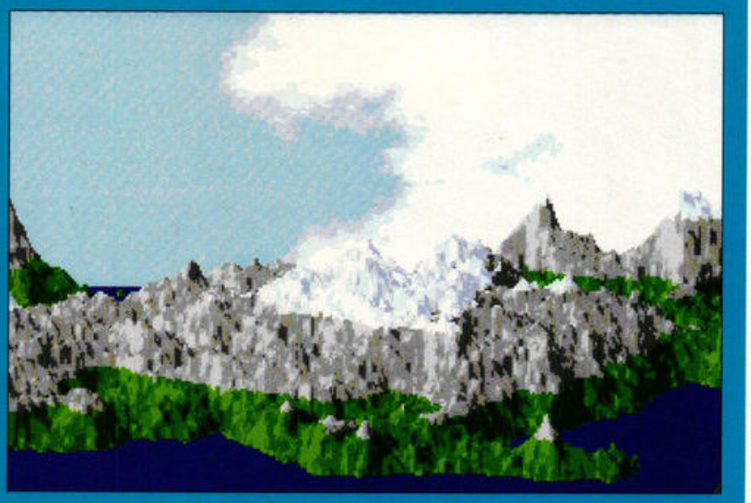
WIN £100 FOR CREATING CHAOS!

Why not write your own fractal program? You can use the *GFA Fractal* program on this month's Cover Disk to give you a few clues and a basic starting point. Alternatively, you could dive in at the deep end and try writing a fractal landscape generator like *Mountains,* also on the Cover Disk.

***ST FORMAT* is offering a cool £100 for the best fractal program submitted. Just save your program to a standard ST disk, in either .PRG form or as a *GFA Basic* listing – and remember to include a document file explaining its operation. Enclose the coupon on page 21, *fully* completed and signed – if we don't have your name and address, we can't send you your prize if you win, can we?**

Then send the lot to: Chaos compo, *ST FORMAT,* 29 Monmouth Street, Bath, Avon. BA1 2DL.

5 To get rid of the spiky-tops, use "Smooth" which is tucked away in the "Mod" menu. This process works on the terrain and reduces some of the differences between neighbouring points. When it's finished, save the new terrain to replace your old one. Now load up the Cloud picture again and select "Fancy Background" to see what you've got. It should be a lot more realistic, but you may notice something else – black shapes in the foreground, like those above. These are caused when the mountains nearest the front are cut off by the screen position. Time to flood 'em out...



6 Select "Water" from the "Show" menu and another new dialogue box appears on the screen. You can make the water level negative or positive (it starts at zero), between +32767 and –32767. To raise the level use the plus sign and try 1000 to start with. Re-draw the picture (using "Fancy Background" to see the change) and raise the water in steps of 1,000 until you remove all the cut-offs. Finally, reload the Cloud picture and do another "Fancy Background" with your new water level set up. Now, only the coloured zones look unnatural in your landscape – a bit too regular and there's no perspective...

→

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recursion. These "monsters" inherited his name and are now known as Julia Curves.

SET FOR LIFE

After sussing both Koch's and Julia's problems and bundling them up into his new field of fractals, Mandelbrot began to realise that these "monsters" deserved more research. He was sure there was a link between recursive fractals and nature – and set out to prove it.

In the process, the Mandelbrot Set (or "mu set") was born. Mandelbrot experimented with different complex numbers using the simple equation $z = (z^2$ minus a complex number). He set z to start at zero and found that complex numbers between –2 and 2 revealed the strange bean-shaped pattern now known as the Mandelbrot set. All complex numbers in this region never get bigger no matter how many times they're squared and fed back into the equation.

The mu set fascinated Mandelbrot and formed the basis of his later research. He found that the boundaries of his new set contained beautiful filaments and curves that connected to smaller copies of the mu set itself. His baby had smaller babies inside it, and they had even smaller babies too.

IN BETWEEN THE DIMENSIONS

After experimenting with flat two-dimensional patterns like the mu set, Mandelbrot turned his attention to solid objects. He took whole bunches of random complex numbers arranged in grids and processed them in the same recursive way, using the same basic rules as before. He found that, by colouring the results according to their resulting infinite or static tendencies, he could create incredible mountain-scapes.

He went on to produce even more esoteric results using different numbers and equations. Mist, clouds, dust swirls and even simple plants could be grown from these new 3D fractal equations. The cutting edge of fractal research now even considers time as the fourth dimension worthy of investigation. Chaos mathematicians are concerned with time-related things like predicting stock-market trends, weather patterns and even human behaviour. What next? ***stf***

Delving deeper with GFA

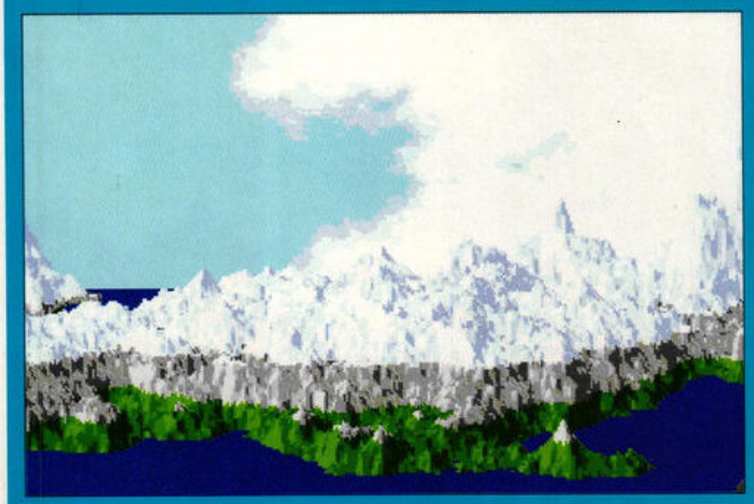
ST FORMAT COVER DISK

This month's Cover Disk features a *GFA Basic* program which enables you to create fractals. To use it, you need a copy of *GFA Basic v2*, which we featured on Cover Disk 22. (Turn to page 130 if you missed that and get your hands on a copy straight away.) Load up *GFA Basic* in low, medium or high resolution and then select "Load" from the menu bar. Choose FRACTA.BAS from the file selector and then hit "RUN" or <Shift>F10 to get it going.

When you've seen what the program does, you might want to customise it. Below is a listing of the two main cores of the program – the Julia set drawing routine and the Mandelbrot set drawing routine. These are called by the main program every time you tell it to draw fractals. Both routines require certain parameters to be set up before operation and these are listed also.

JULIA PARAMETERS

`Real Const. Value = P`	Real constant, added every loop
`Imag. Const. Value = Q`	Imaginary constant, added every loop
`Min. Fractal X = Xreal_min`	Minimum number used for horizontal axis
`Max. Fractal X = Xreal_max`	Maximum number used for horizontal axis
`Min. Fractal Y = Yreal_min`	Vertical axis minimum
`Max. Fractal Y = Yreal_max`	Vertical axis maximum
`Size = Diff`	Infinity check limit. If the calculation exceeds `Diff`, then it's going to infinity. The plot colour relates to the length of time it stayed "in-bounds." Change it to a higher number for greater accuracy (and slower plot).
`Max. Iterations = Maxiter`	Max number of iterations (loops). If the number is still "in-bounds" after this number of loops, then it's part of the Mandelbrot set. Change it to a higher number when zoomed in, for greater accuracy and definition (and an even slower plot).



7 To make the coloured zones appear more realistic, click on "Zone Tilt" from the "Show" menu. This makes the widths of the coloured bands narrower on the mountains close to the horizon. It's a bit of a fudge, but it creates the illusion of perspective by making all the zones converge as they get further away from your viewpoint. You need to reload the Clouds picture again and do yet another "Fancy Background" on top of them. When this has finished, you are left with something like the picture above. Still looks a bit too regular though. Perhaps we can now find some way to change that...

8 To get something more like this last frame, select "Zone Wander" from the "Show" menu. This makes the coloured bands look more natural by varying their height randomly (within limits). This prevents the stark, horizontal lines which give away the fact that the picture has been generated on an ST. As before, re-load the clouds and do another "Fancy Background." For further experiments, try changing the Zone Altitudes to raise the snow-line, or tilting the view angle by raising the Horizon line. You can also vary the angle of sunlight and change the palette to create different effects. Your world is in your hands!

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MANDELBROT PARAMETERS

Min. Real Const. (P) = Pmin	Min real constant (plotted horizontally)
Max. Real Const. (P) = Pmax	Max real constant (plotted horizontally)
Min. Imag. Const. (Q) = Qmin	Min imaginary const (plotted vertically)
Max. Imag. Const. (Q) = Qmax	Max imaginary const (plotted vertically)
Size = Diff	Infinity check limit
Max. Iterations = Maxiter	Max number of loops

THE MAIN JULIA SET DRAWING ROUTINE

Procedure Draw_julia	
For Ny=0 To Max_height-1	For each horizontal line (top to bottom)
For Nx=0 To Max_width-1	For each dot on each line (left to right)
X0=Xreal_min+Nx*Xdelt	Work out Xreal for that position
Y0=Yreal_min+Ny*Ydelt	Work out Yreal for that position
K=0	Iteration counter initialised
Do	Start Looping
Xk=X0*X0-Y0*Y0+P	$Xreal^2 - Yreal^2$ + Real constant
Yk=2*X0*Y0+Q	(Xreal*Yreal*2) + Imaginary constant
Inc K	Increment iteration counter
Reals(K)=Xk	Store Xk in array "Reals"
Imaginarys(K)=Yk	Store Yk in array "Imaginarys"
R=Xk*Xk+Yk*Yk	Check $Real^2 + Imaginary^2$
Exit If R>Diff	Is it greater than infinity check?
Exit If K>Maxiter	What about iteration max reached?
Exit If K>1	
And Reals(K) = Reals(K/2)	
And Imaginarys(K) = Imaginarys(K/2)	
	Are the results repeating?
X0=Xk	Update Xreal
Y0=Yk	Update Yreal
Loop	End of iteration loop
Klr=K Mod Colnum	Divide iteration by 16 for low res colour
If K>=Maxiter Then	
Klr=1	Black if iteration count exceeded
Endif	
Color Klr	Use it to select a palette colour
Plot Nx,Ny	Plot the pixel at current row and column position
Next Nx	Next column – go around again
Next Ny	Next row down – go around again
Return	End of routine

THE MAIN MANDELBROT DRAWING ROUTINE

Procedure Draw_mandel	
For Nq=0 To Max_height-1	Each row down
For Np=0 To Max_width-1	Each column across
X0=0	Set Xreal to 0
Y0=0	Set Yimaginary to 0
P0=Pmin+Np*Pdelt	Set current real constant
Q0=Qmin+Nq*Qdelt	Set current imaginary constant
K=0	Initialise iteration counter
Do	Start of iteration loop
Xk=X0*X0-Y0*Y0+P0	$Xreal^2 - Yimaginary^2$ + Real constant
Yk=2*X0*Y0+Q0	(Xreal * Yimaginary * 2) + Imaginary constant
Inc K	Increment iteration counter
R=Xk*Xk+Yk*Yk	Check $real^2 + imaginary^2$
Exit If R>Diff	Is it tending to infinity?
Exit If K>Maxiter	Max iterations reached?
X0=Xk	Update Xreal
Y0=Yk	Update Yimaginary
Loop	End of iteration loop
Klr=K Mod Colnum	Find colour corresponding to iterations
If K>=Maxiter	Set to black if iterations exceeded
Klr=1	
Endif	
Color Klr	Set plot colour accordingly
Plot Np,Nq	Plot pixel at the current row and column position
Next Np	Next column – go around again
Next Nq	Next row – go around again
Return	End of routine

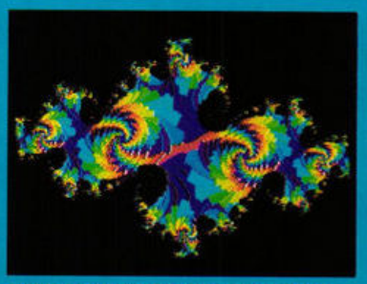
HOW YOU CAN GET BACK TO BASICS FOR AS LITTLE AS £3

There are other fractal-based ST programs you can experiment with, like *Snowflake*, which was yours on Cover Disk 27. (To order back issues, turn to page 130.) Here's some of what you can do using *Fractal Generator*, available for about £3 from The South West Software Library, PO Box 562, Wimborne, Dorset BH21 2YD (ask for Disk 796), and from other good Public Domain libraries – see *FORMAT's* directory, page 50

● The basic Mandelbrot set – it may look a bit like a squashed beetle or something you'd find stuck to the bottom of your shoe, but marvels lie within!

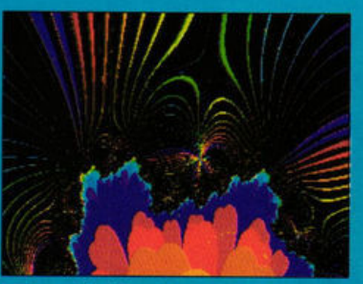
● The Julia curve. Fractal pattern generators enable you to explore its mathematical wonders on your own ST. You can even watch it grow!

● A chaos set. If you begin with just slightly different parameters, you get a markedly – and unpredictably – different pattern in the end.

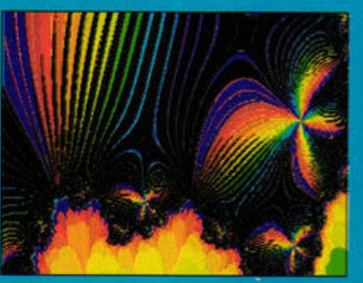


● This is the basic Chaos set in all its technicolour glory. The colours are "natural" – determined by the program.

● Here you see the same set but using a different palette. Cycle the colours for new perspectives on the pattern.



● Zoom into the chaos set to show some detail: it goes on infinitely. This is where Chaos really becomes fun...



● Zoom in even closer. No matter how much you zoom in, you can never predict the chaotic result on screen.

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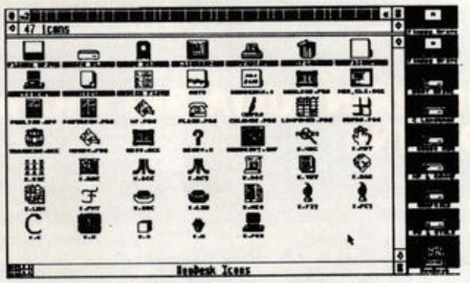

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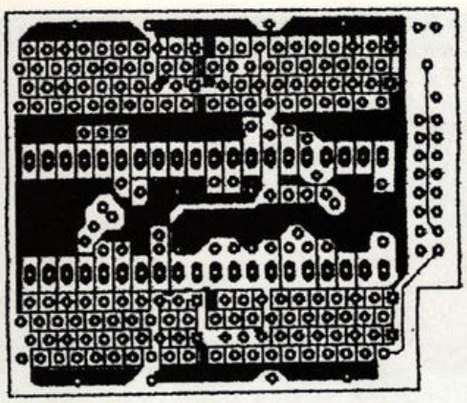

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PageStream 2

After a patchy history, SoftLogik's *PageStream* finally resurfaces, now boasting new fonts, new functions and a new lease of life. Is it all it's cracked up to be? Can it really take on the professional ST publishing packages and still come out alive to tell the tale? Neil Jackson finds out...

PageStream is proof that you only get one chance to make a first impression. When this powerful DTP package was first released back in 1985, controversy and criticism poured in from all directions, thanks to a few programming bugs which made it into the final version. Since that day, SoftLogik have been fighting to keep *PageStream* alive and healthy – a task which must have seemed impossible after such an unimpressive launch.

Now, six years later, *PageStream* has had another facelift and re-appeared as *PageStream 2*. What has changed apart from the slightly-altered name? A closer look reveals that, although the main display looks exactly the same, the guts of the program have been honed to make them more efficient, new features have been added to make what was a versatile – if bugged – program into a more practicable – and bug-free – package.

COLOUR BY NUMBERS

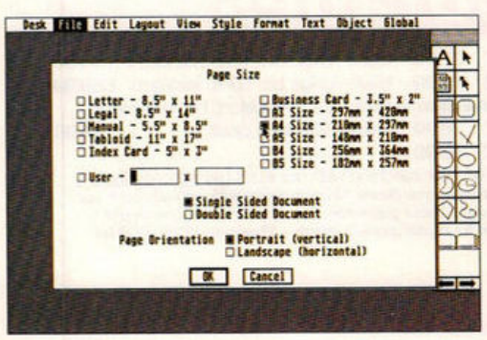
PageStream 2's major claim to fame is its ability to work on the Atari TT 32-bit computer. This is great for those of you looking for full-colour DTP on this machine, but what about the standard ST range?

Don't worry: the new version of the program still works well on the ST, Mega and STE in all memory configurations. Obviously it's far better on a 4MByte system, where there is much more space to hold complex documents, but it can still handle most newsletter, CV or mailshot flyer-type documents on a bog-standard 520.

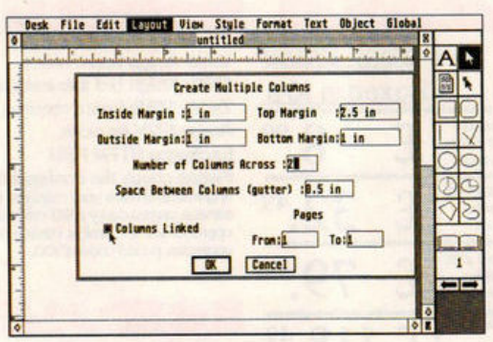
Ever since its first incarnation, *PageStream* has been able to handle four-colour separations – a process used in professional printing to produce colour pages. *PageStream 2* carries on, and expands upon, this tradition, now enabling you to handle a variety of colour-systems on the ST. You can design your printing colours using all these colour systems:

- CMYK (Cyan, Magenta,Yellow, Black) four-colour separations
- RGB intensity level colours
- HSV (Hue, Saturation, Value)
- HLS (Hue, Luminance, Saturation)
- HSB (Hue, Saturation, Brightness)
- YIQ (Yield, Intensity, Quadrature)
- Pantone Matching System (a professional standard used by Macintoshes).

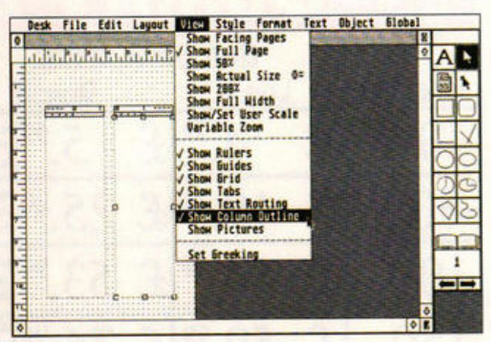
There are so many available colours in all these systems that, as you'd expect, your average ST cannot hope to reproduce them all on-screen with its palette of a mere 16 shades. Instead, you can choose generic on-screen colours to be used for denoting basic shades – your printer does the actual work when it comes to converting this into the correct



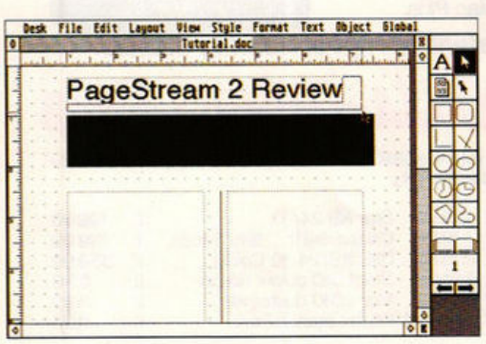
● To create a newsletter in *PageStream 2*, you must first use "New Document" to choose a paper sheet size. On this screen you can also choose which way round the paper is positioned and how many sheets you intend to use.



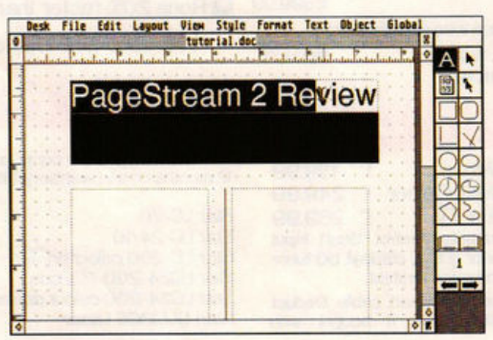
● Next, you should choose "Create Columns" to take you to this screen. Here you can set up the size and number of columns on your page. You can make them a precise size and link them together so that text flows from one to the next.



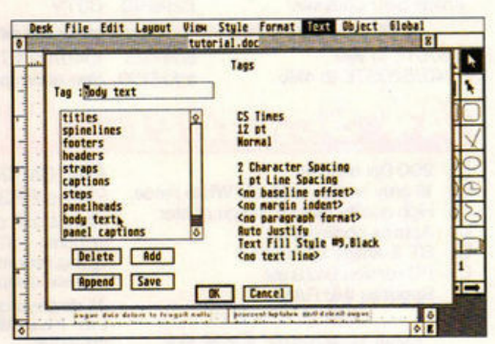
● Use the various View options to see your whole document, the outlines of the coloumns and the text routing markers. The new display gives you a basic idea of where the text ends up on the finished page and whether it's balanced.



● Using the Text tool, click on a blank area of the page and type in the headline. Text defaults to a 12 point font – which is a bit small, so you should re-size the text in Pointer mode, by pulling on the handles on the edge of the box.



● With the Text tool active again, click on one end of the text and drag across to highlight it. You can then use the "Fill Styles" option to turn the headline into solid white instead of black. When positioned over the black panel, the headline shows up.



● Use "Import Text" when you have the text cursor inside the left column and you can load a word processor file. You can use the "Tag" function to store your own styles for all the different kinds of text and apply them to the imported text.

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colour on paper. This may sound like a limitation but, in fact, you rarely notice it.

In medium resolution you can display four colours – although only two in high resolution – but it's still very easy to do colour work and produce excellent results. All you do is select the desired colour from the list, define an on-screen colour to represent it and *PageStream 2* does the rest.

Black and white printing is even easier because *PageStream 2* accurately reproduces the look of the final printout on-screen. Medium resolution is no problem to work in, but high resolution provides an even better representation.

FONT OF ETERNAL LIFE?

PageStream 2's other major enhancement is an improved range of fonts. Gone are the tiresome, jagged-looking SoftLogik screen fonts. These have been replaced by an internal feature which examines the outline or vector font – which is used in printing – and re-scales it for the screen. This improves the display a great deal, making the on-screen representation look far more like the end-product than the original *PageStream* ever could.

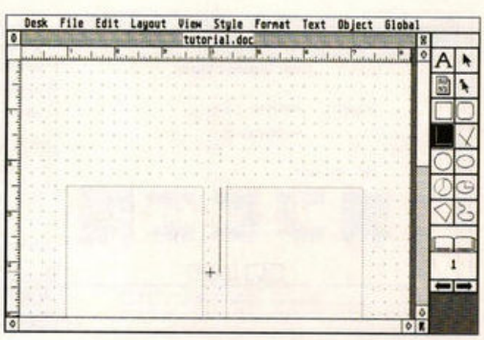
As if that wasn't enough, SoftLogik have extended the range of fonts *PageStream 2* can use. Supplied with it are three Agfa Compugraphic fonts – Times Roman, Triumvirate (which to all intents and purposes is basically Helvetica) and Garamond. Compugraphic is a standard used by many professional printing bureaus, and these fonts can be used directly by *PageStream 2* with no fussing, no converting and perfect results.

As far as we know, *PageStream 2* is the only DTP package available for the ST which can handle Compugraphic fonts. This makes it a definite first →

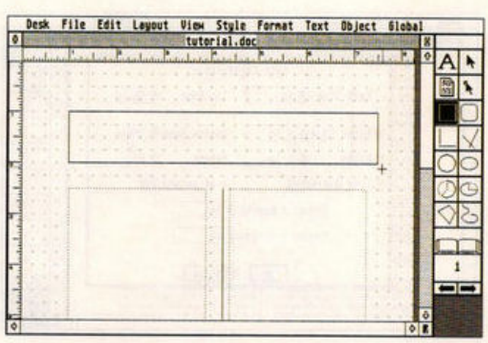
THE *PAGESTREAM 2* PRINTER PARK

PageStream 2 boasts compatibility with a huge range of printers which you might find plugged into your ST. Here's a list of major (and minor) printers which can be directly interfaced to *PageStream 2* using the drivers supplied. Is yours here?

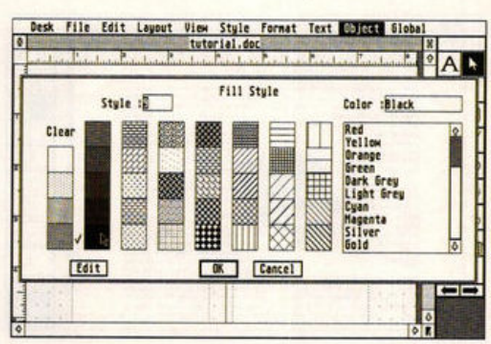
MANUFACTURER	MODEL
Acer Destiny	LP – 76
Acorn Computer	LX38 – 20
Agfa-Gevaert	P3400 PS
Alcatel Courier	9375
Alcatel Courier	9376
ALPS	ALQ224
ALPS	ALQ324e
ALPS	LPX600
Apollo	Laser Print800
Apple	ImageWriter2
Apple	LaserWriter
Apple	LaserWriter+
Apple	LaserWritIINT
Apple	LaserWriter IINTX
AST	Turbo Laser/PsPlus3
Atari	SLM804
Atari	SMM804
BGL Technology	Mark 1B
BGL Technology	Mark 2/3
Brother	2024L
Brother	HL8e
Brother	M – 1109
Brother	M – 1709
Brother	M – 1724L
C.Itoh	8510A
C. Itoh	8510S
C. Itoh	8510SC
C. Itoh	C – 715F
C.Itoh	Jet-Setter 2
C-Ltd	Laser-Xpress
Calcomp	PlotMaster
Canon	BJ-130
Canon	PJ-1080A
Citizen	Tribute 124
Citizen	Tribute 224
CPT	CPT LP- 8
Data Products	LZR - 1260
Data Technology	Crystal PrintWP
Diconix	300
Diconix	300WP
DTP Systems	DTP Laser Printer
Epson	420i
Epson	EPL-6000
Epson	EX-1000
Epson	EX-800
Epson	FX-100
Epson	FX-100+
Epson	FX-185
Epson	FX-286
Epson	FX-286e
Epson	FX-80
Epson	FX-80+
Epson	FX-85
Epson	FX-86e
Epson	HS-80
Epson	JX-80
Epson	L-1000
Epson	L-750
Epson	LQ-1000
Epson	LQ-1050
Epson	LQ-1500
Epson	LQ-2500
Epson	LQ-2550
Epson	LQ-500
Epson	LQ-510
Epson	LQ-800
Epson	LQ-850
Epson	LQ-950
Epson	LX-80
Epson	LX-800
Epson	LX-810
Epson	LX-86
Epson	MX-100
Epson	MX-100 TP III
Epson	MX-80
Epson	RX-100
Epson	RX-100+
Epson	RX-80
Epson	RX-80f/t+
Epson	SQ-2000
Fujitsu	DL-2400
Fujitsu	DL-3300
Fujitsu	DPL-24c
HP	DeskJet
HP	LaserJet
HP	LaserJet IID
HP	LaserJet s. II
HP	PaintJet
IBM	Proprinter II
IBM	Proprinter XL
IBM	QuietWriter
Imagen	Ultrascript
Legend	808
Legend	880
Linotronic	L100
Linotronic	L200
Linotronic	L300
Mannesmann Tally	MT180I
Mannesmann Tally	MT180L
Mannesmann Tally	Spirit-80
Nec	CP6
Nec	CP7
Nec	LC-860
Nec	LC-890
Nec	P2200
Nec	P5200
Nec	P5300
Nec	P6
Nec	P7
Okidata	ML-182
Okidata	ML-183
Okidata	ML-192
Okidata	ML-193
Okidata	ML-292
Okidata	ML-293
Okidata	ML-390
Okidata	ML-391
Okidata	ML-84
Okidata	ML-92
Okidata	ML-93
Okidata	Okimate 20
Okidata	PaceMark 2410
Panasonic	224
Panasonic	KX-P1091i
Panasonic	KX-P1124
Panasonic	KX-P1180
Panasonic	KX-P1191
Panasonic	KX-P1524
Panasonic	KX-P1592
Pixelations	PrintScript
QMS	Colorscript
QMS	Kiss
QMS	PS-800
QMS	PS-810
Qume	ScripTEN
Ricoh	PC Laser 6000
Ricoh	Postscript
Roland	PR-1012
Roland	PR-1112
Roland	PR-1212A
Roland	PR-1215
Roland	PR-1250
Roland	PR-1550
Seikosha	BP-5420AI
Seikosha	BP-5420FA
Seikosha	BP-5420FL
Seikosha	BP-5460
Seikosha	MP-1300AI
Seikosha	MP-5300AI
Seikosha	SK-3000AI
Seikosha	SK-3005AI
Seikosha	SL-130AI
Seikosha	SL-230
Seikosha	SL-80AI
Seikosha	SL-80IP
Seikosha	SP-1000A
Seikosha	SP-1000AS
Seikosha	SP-1200AI
Seikosha	SP-1200AS
Seikosha	SP-1600AI
Seikosha	SP-1600AS
Seikosha	SP-180AI
Sharp	JX-720
Sharp	JX-730
Star Micronics	Gemini 10
Star Micronics	Gemini 10x
Star Micronics	Gemini 15
Star Micronics	Gemini 15x
Star Micronics	LaserPrinter8
Star Micronics	LV-1210
Star Micronics	LC-10
Star Micronics	LC-24
Star Micronics	LC-24-200
Star Micronics	NB-15
Star Micronics	NB24-10
Star Micronics	NB24-15
Star Micronics	ND-15
Star Micronics	NL-10
Star Micronics	NP-10
Star Micronics	NR-10
Star Micronics	NR-15
Star Micronics	NX-10
Star Micronics	NX-1000
Star Micronics	NX-15
Star Micronics	NX-2400
Star Micronics	Radix 15
Star Micronics	SB-10
Star Micronics	SD-10
Star Micronics	SD-15
Star Micronics	SG-10
Star Micronics	SG-15
Star Micronics	SR-10
Star Micronics	SR-15
Star Micronics	XB-2410
Star Micronics	XB-2415
Star Micronics	XR-1000
Star Micronics	XR-1500
Tandy	CGP-220
Tandy	DMP-430
Tektronix	4693D
Tektronix	4693DX
Toshiba	Express Writer301
Toshiba	Express Writer311
Toshiba	P1340
Toshiba	P1350
Toshiba	P1351
Toshiba	P321
Toshiba	P321SL
Toshiba	P321SLC
Toshiba	P341
Toshiba	P341e
Toshiba	P341SL
Toshiba	P351
Toshiba	P351 model 2
Toshiba	P351c
Toshiba	P351c model 2
Toshiba	P351SX
Toshiba	PageLaser12
Xerox	4020



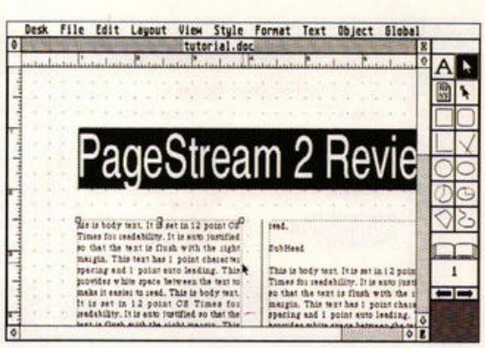
● For a short newsletter, a dividing line between the columns is a nice touch. Use the X/Y Lines tool to position both ends of this line. You can still move the window around, with the line active, so that you can position the ends in close-up.



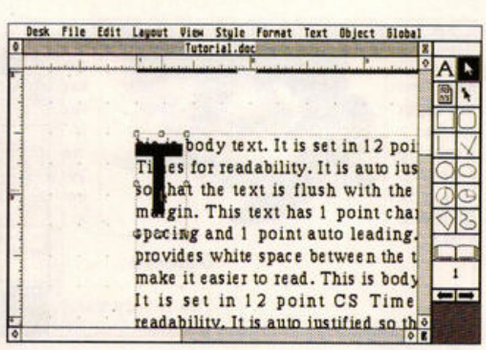
● Next, you want a blacked-out box to put the banner headline onto. Use the Box tool and click on the page at the positions where you want the top left and bottom right corners to go. Then click on the edges of the box using the Pointer tool.



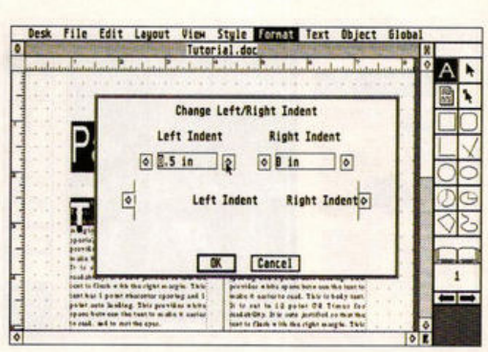
● With the box selected, choose "Fill Style" to show this screen. Just click on the solid block (fill style 9) and choose black from the list. The box is then refilled with the new style, making it into a solid panel for placing behind white text.



● With the tags applied, your new body text should look something like this. To change the style of individual words, use the highlighting technique (which you used before with the headline) and then choose the appropriate tag from the list.



● You can create a drop cap – or enlarged first letter – by typing the letter in a blank area, highlighting it, and selecting the correct tag. Then, reposition the letter in the top left corner of the first column over the body text.



● Highlight the first three lines of body text and then use "Left/Right Indent" to move them inwards from the left edge of the column. This creates a white space behind the drop cap and re-flows the rest of the text below it.

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choice for anyone who wants to use typefaces from Agfa Compugraphic's immense range.

PageStream's other, older distinction is that it could handle PostScript output – a feature of great importance to owners of PostScript printers or clients of professional DTP bureaus. *PageStream 2* is no exception, and the extent of its compatibility with PostScript has actually been increased. You can now purchase any PostScript type 1 font (as used by Amiga or PC-compatible DTP packages) and use it, unmodified, on your ST with *PageStream 2*. Type 3 fonts can also be used with a little modification. This makes *PageStream 2* the most widely compatible DTP package in terms of printer fonts and typefaces. You can now re-create virtually anything you've seen on professional documents, providing you can find the font in either SoftLogik's, Compugraphic's or Adobe's massive libraries of fonts.

Pagestream 2 is an incredibly versatile and functional package for all forms of DTP, whether professional or amateur

GET THE WHOLE PICTURE

Another area to have been improved is the graphics capability. This has been enhanced by the inclusion of several new import/export driver routines which can handle a greater range of file-types than *PageStream*. It's now possible to import Macintosh EPS, PICT and TIFF graphic files straight from *Adobe Illustrator* – a professional Macintosh art package – and include them in your pages. The only drawback is that they can't be displayed in detail on screen – all you see is a crossed box which shows where the picture is placed. You must print the document out to see the EPS file as it really is – a picture – but you can do this on any printer regardless of whether it's PostScript-compatible.

Improvements have also been made to the range of drivers for ST bitmapped artwork. Bitmapped pictures can be imported from *Degas Elite, Neochrome,* and *DPaint* (IFF format), while IMG format files (produced by some Atari paint packages and most scanner software) can also be used. All these kinds of images can be viewed on screen in black and white, re-sized, rotated and printed in full-colour, separations or monochrome. This makes including pictures, graphs and diagrams with your documents incredibly easy – just load them and plonk them on the screen where you want them to go.

The inclusion of *PageStream 2's* new features is not at the expense of the old ones. *PageStream 2* is still an incredibly versatile and functional package for all forms of DTP, whether professional or amateur. Obviously, you can get more out of it if your printer is of professional quality, or if you have 1MByte or more of RAM installed. However, for casual work a 520ST and an Epson-compatible printer can produce more than acceptable results.

Compared to *Calamus* (which is still not able to produce four-colour separations), *PageStream 2* perhaps looks a little old, but it still gets the *ST FORMAT* vote because of its superb features and its ease-of-use. You only need a quick tour of the menus to get a feel for what *PageStream 2* can do – experiment a little and you find you can knock out good quality paperwork in a short space of time at a price you can just about stretch to. Full marks to SoftLogik for staying with *PageStream* through the tough times – perhaps now they'll get a little better. ***stf***

● Impressed? So how would you like the chance to win £1,000 worth of *Pagestream 2?* That's what's up for grabs in this month's huge competition! Turn to page 148 right now!

PAGESTREAM 2

£199.95

SoftLogik/Silica ☎ 081 309 1111

FEATURES: 98%
Almost as many features in *PageStream 2* as you'd find on a professional Mac program like *Quark Xpress.*

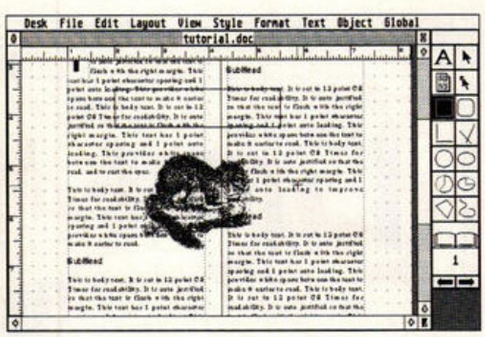
SPEED: 80%
Improved printing and screen-updating speeds, thanks to re-written driver software. Still a bit slow if you have 1MByte of RAM or less.

EASE OF USE: 94%
Your granny could use it, it's that straightforward. Very short familiarisation time needed to understand all the main features. An excellent manual and tuturial to boot.

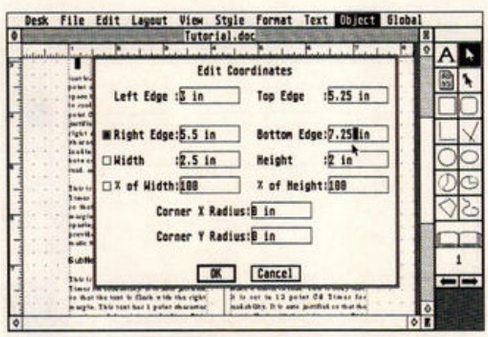
RESULTS: 96%
From the humblest dot-matrix to the posiest laser, *PageStream 2* gives clean and crisp results.

THE COMPETITION
Calamus 1.09N (£264.38 Signa ☎ 0252 370066) is the closest opposition. It is icon driven, boasts excellent screen fonts and is more helpful. *Pagestream 2* gives far more professional results than *Timeworks* DTP (£99.99 Electric Distribution ☎ 0480 496789). Neither *Timeworks* nor *Fleet Street Publisher 3* (£159 Gasteiner ☎ 081 365 1151) can offer colour output.

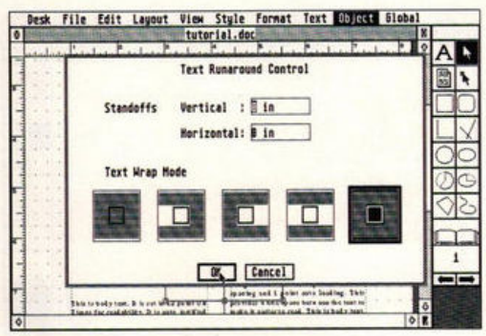
STF RATING: 94%
Still the cheapest major-league package you can buy. If you're looking for a way into DTP, then definitely start with *PageStream 2.*



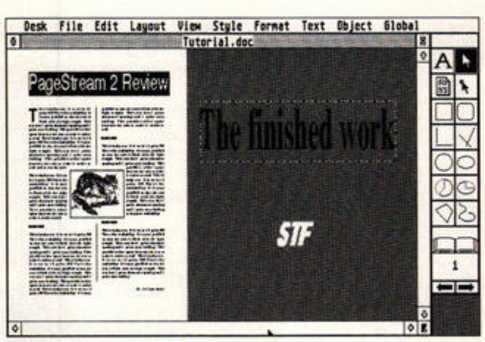
● To place a picture in your document, use "Import Graphics" and choose your prepared image. Plonk it onto the text anywhere for the moment and then create a normal clear-filled box somewhere else. You use this to make an outline frame for your picture.



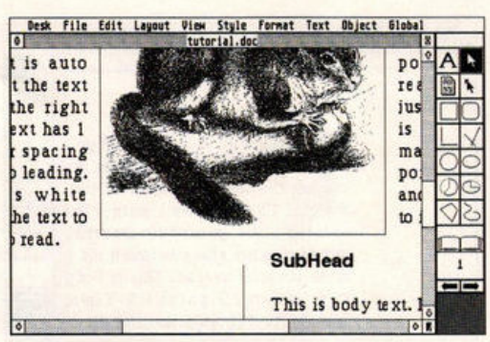
● Select the box and choose "Edit Coordinates" to re-size and re-position it in the middle of your page. Then use "Lock" to stick it down in the new position. Now it won't be affected when you move the picture on top of it with the "Align" option.



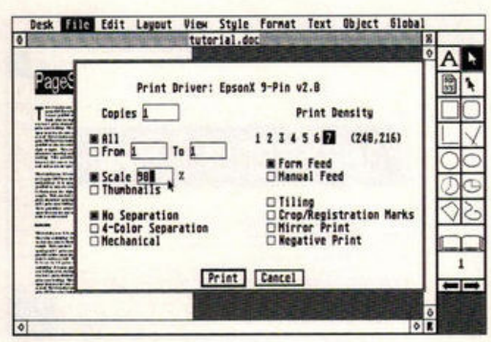
● Select the box again and use the "Text Runaround" option to re-flow the text around all four sides. You can enter a value into the standoffs fields to make a clear border around the edges of the box. This stops the text running too close.



● Position the picture in the box with "Align" and place a small white box underneath it to blank off the dividing line. Your newsletter is now finished. Here you can see the off-page workspace where you can temporarily store objects and text.



● Use the close-up view, at 200% zoom, to check your document before you print it out. Turn off the grid, the column outlines and the rulers to get an exact representation of the final page. Save it to disk before you print it, just to be safe.



● The print window shows which printer driver you've loaded and enables you to make adjustments to the printed output. You can separate the colours, adjust the blackness of the ink, and re-scale the document to fit your printer's paper size.

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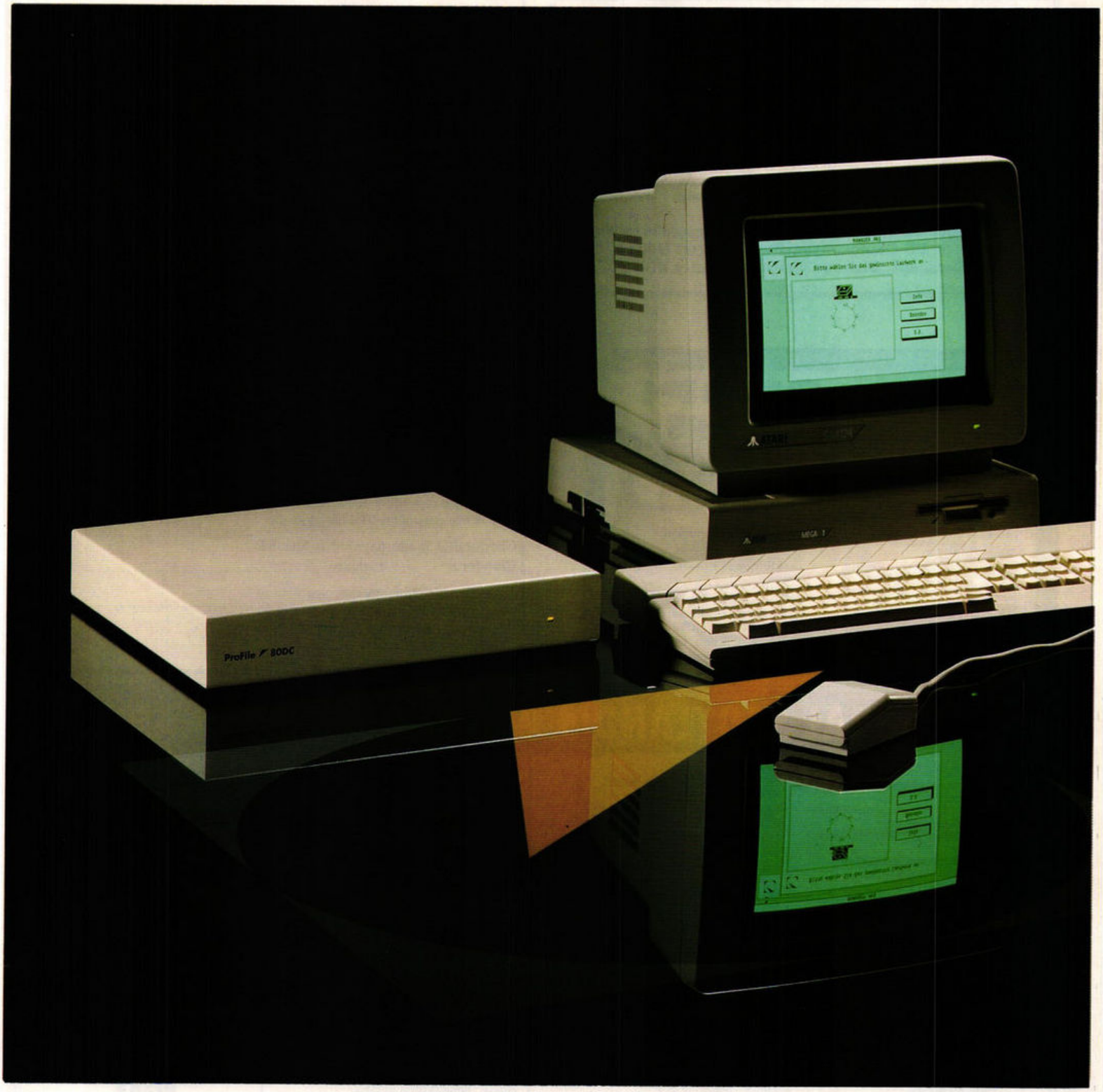
protar – Looking after number one



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Public Sector

If you put all the disks in Public Domain end to end, you'd probably be taken away for analysis. There's oceans of free software out there, so Chris Lloyd fearlessly wades in up to the neck and nets the good stuff

GAMES

● I didn't want the mouldy bit of food in the corner, anyway. A worm-type monster thingy invites you to do some impromptu dentistry. The dungeon is big enough to keep you exploring late into the night, down in the *Mystic Well.*

MYSTIC WELL

East Midland PDL – Disk Game 118

Classic dungeons and dragons stuff – creeping around dank rooms casting spells and interacting with the locals – well, trying to kill them, mostly. All the usual elements are here: magic items, water and food. Personally, I would think twice before eating anything I found lying around in a cellar, but there you go. Primitive graphics and limited sound but plenty of gameplay. Mouse response is sluggish but otherwise quite playable.

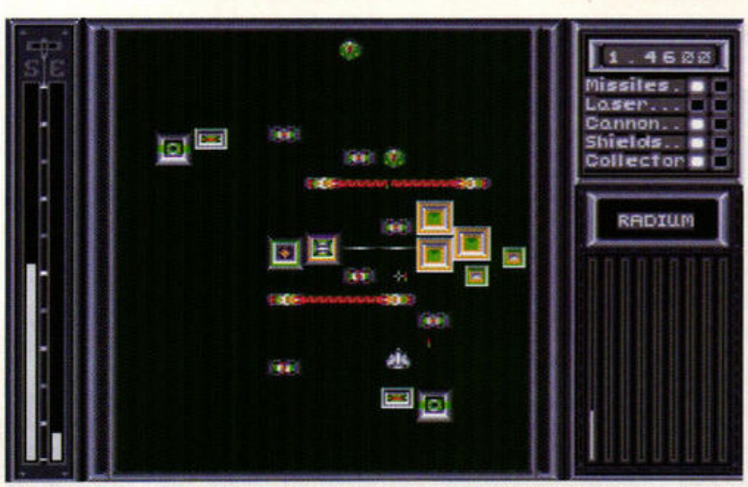
***STF* RATING – 74%**

COMPANION 1

Caledonia PDL – Disk GM 62

Good bit of programming, this. You guide a little ship across nine manic levels of scrolling landscape picking up supplies of essential elements. Small but detailed sprites scroll across the screen very smoothly with decent chip effects. Unfortunately, this game lacks the manic quality which a shoot-'em-up needs to really get the pulse beating. Your ship moves rather slowly and it gets very repetitive after a short while.

***STF* RATING – 75%**



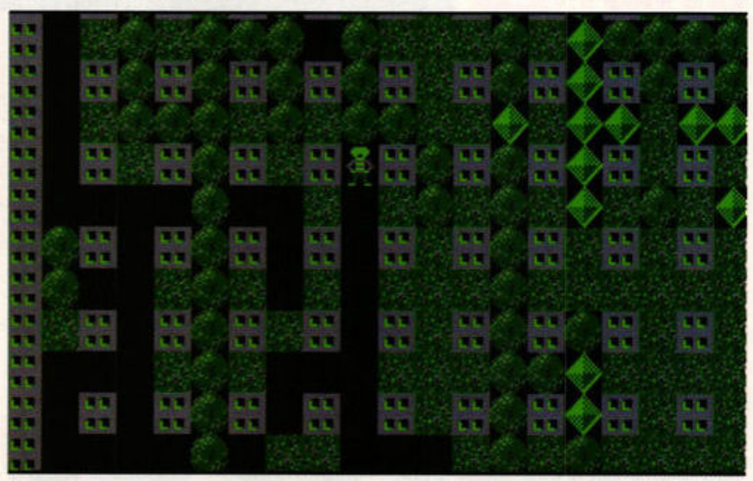
● Force fields, mines and little green creepies – ever get the impression you're not welcome here? The fearless Captain Bonzai goes in anyway, guns ablazing. The last thing a pilot needs is a social conscience. Check it all out in *Companion 1.*

DOUGLAS ROCKMOOR 2

Riverdene PDL – Disk BU 65

"If something works, stick to it." Games programmers take this too much to heart if the number of *Boulderdash* clones is anything to go by. This has to be one of the best. Douglas spends his time running around avoiding being squished by boulders and collecting diamonds against the clock. (Why is it always diamonds, I wonder?) Great intro screens and some nice touches – Douglas taps his foot when time gets short. Should drive you up the wall in no time.

***STF* RATING – 82%**



● Douglas does his party trick – balancing several very heavy rocks on his head. Soon to be followed by his being very flat trick, in *Douglas Rockmoor 2.*

● *Avina Blue* is blue, scrolls smoothly and very fast. Touching the horizontal walls creates sparks rather than death. The vertical ones are another story.

AVINA BLUE

Riverdene PDL – Disk BU 72

Budgie games just get better and better! *Avina Blue* is a horizontally-scrolling blast that zooms along at the speed of, er, something zooming along extremely fast. You need quick reactions and a finger glued to the "Fire" button. It can take a while for you to get going but once you start making progress it really is manic stuff. Luckily you get loads of ships and, after kissing the wall at mach two, you get to start on the section you've reached rather than the start again. I wish all games were like that.

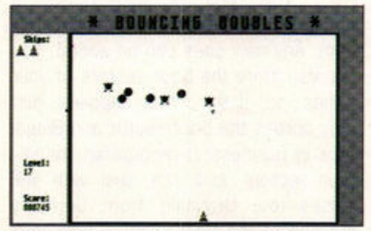
***STF* RATING – 77%**

BOUNCE

Softville – Disk Game 14

Mono only, this one. Been around a while but a classic concept – left, right and fire. Very smooth sprites bounce around the screen including these little chickens that drop bombs on you. It's German like all the good mono software seems to be. If your German is not up to much, try pressing P for a blast with a single shot gun or M for the machine gun and wiggle the old joystick around. No brain-power required – just good reactions. Just the thing you need after a session spreading your sheets.

***STF* RATING – 72%**



● Wow! Look at those sprites! Gawp at those backgrounds! Now have a peek at this screenshot from *Bounce.*

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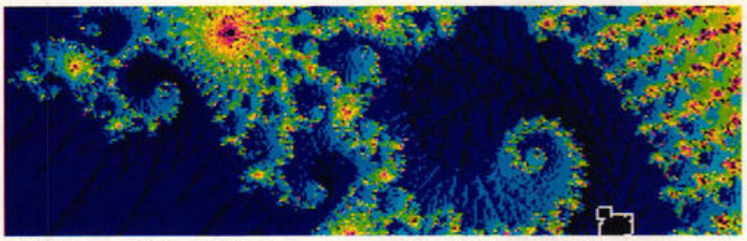
→ ART AND MUSIC

FRACTAL ZOOM 3

Goodmans PDL – Disk GD 466

If your appetite for all things fractal has been whetted by this month's feature, try this brilliant generating program. This is the latest version and enables you to save pictures out in *Degas* format. It can produce Mandelbrot, Julia and Chaos sets with all sorts of fancy parameters. You can even make little movies zooming around a picture. There's no way I can make head or tail of all the fancy maths behind it, but the end results are stunning.

***STF* RATING – 92%**



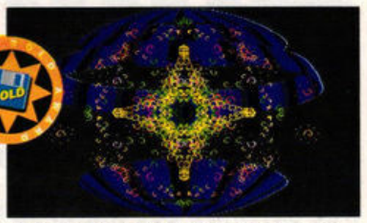
● **There are squillions of Mandy programs and *Fractal Zoom 3* stands out as one of the best – art, nature and maths combine to create... er, natural mathematical art.**

COLOURSPACE

Jennix PD – All colour STs

Jeff Minter does it again! His brilliant light synthesizer is now Shareware. Send him a fiver and you get the manual, which you need to make full use of this unusual and hypnotic program. Turn down the lights, pump up the 13th floor elevators and wiggle the mouse around to make flowing iridescent patterns. Oh wooooooow, man. Highly recommended for all airheads.

***STF* RATING – 95%**



● **Cosmic patterns, man. *Colourspace* effects include starfields, strobes, variable symmetry and pattern shapes. Groovy stuff indeed. Now, where on earth did I put my Afghan?**

ARTEMIS SAMPLES

Riverdene PDL – Disks 919 to 931

Can't find a sound which strikes the right note and don't have a sampler? These disks contain loads of the little blighters in SPL format at 8MHz. Mostly sampled straight from CD, they are of good quality and ready to use in your own music packages. All sorts of drums and synth sounds are included as well as some weirdoes shouting, "Oh yeah!"

***STF* RATING – 70%**

UTILITIES

● ***Turbo Assembler* is a program to dump the screen to disk as a *Degas* picture. Funny, it looks like gobbledegook to me.**

TURBO ASSEMBLER

Floppyshop ST – Disk LAN 77

Formerly the Omikron assembler, this is a full assembler and debugger which is now Shareware. Register to get a 240 page manual and a free update. Examples are in German, but everything else is translated. It's a well-featured package but you need 1MByte of memory to use it fully. If you're serious about learning assembler, this is a real bargain.

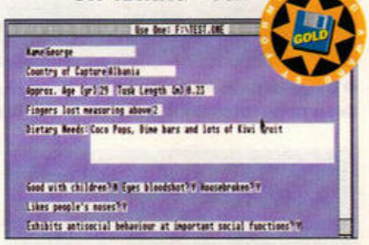
***STF* RATING – 82%**

DB MASTER ONE

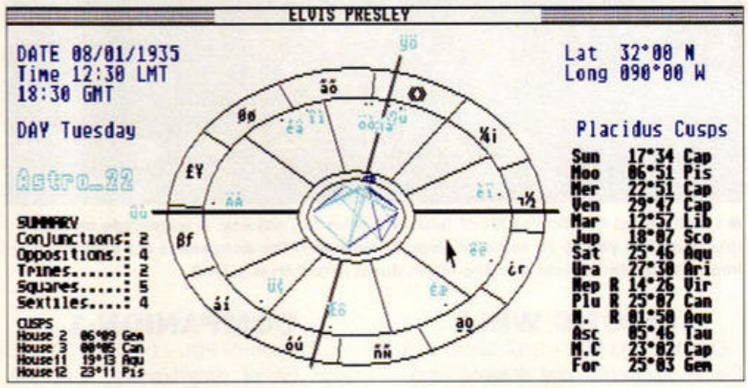
Softville – Disk ACC 26

This is just the job for keeping track of your cornflake collection. *DB Master* is an extremely easy-to-use GEM database that you can use to store, find and print information. It has full on-line help and is very intuitive to use. Everything apart from data-entry is done with the mouse and it has copy, paste, search and flexible report generation. This could be the only database you need. (Groan! That was reviewer's cliché No 17.)

***STF* RATING – 90%**



● ***DB Master* is a good solid database. Databases can be fun – imagine keeping track of all the trains you've spotted.**



● **From your chart I would advise avoiding sequined suits, Las Vegas and junk food. *Astro 22* comes with a few famous people's charts worked out already.**

ASTRO 22

Floppyshop ST – Disk AST 02

A lot of people are very sceptical about astrology but it's becoming increasingly popular, along with a lot of other New Age stuff. I've had my starsign sussed enough times to believe there is something in it. *Astro 22* does all the hard bits of working out the starchart for you. It runs in med or high resolution and add-on modules are available to do all sorts of fancy things. If you're interested in this stuff, this is the program for you. If you're completely dismissive about it, you're probably a Taurus.

***STF* RATING – 75%**

SAGROTAN

Goodman PDL – Disk GD 1226

It's easy to be blasé about all this fuss over viruses, but if you lose valuable data you end up jumping around the room swearing to interface the virus programmer with something large and heavy. The trouble with a lot of virus killers is they need to be upgraded to deal with each new virus. This one is expandable; it matches boot sectors with a library of them. Any new ones can be added. You can also store the boot sectors of your games, so, if the worst happens, just copy across the boot sector and Bingo! Back in business! It recognises friendly boot sectors and can deal with link viruses too. Originally from Germany and one of the best in PD – you can't have too many virus killers.

***STF* RATING – 91%**

GET THE MOST OUT OF *SAGROTAN*

TIPS

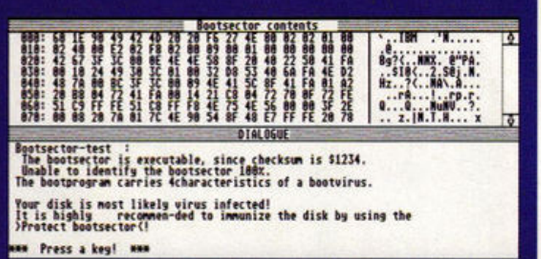
THE MASTER OF THE BOOT SECTOR

Sagrotan comes with plenty of documentation but leaves out how to do its best trick – repairing your games disks. There are two versions on the disk: version 4.14 is fully translated but 4.17, the latest, is all in German. It's this version which can write boot sectors from the library to disk.

It's probably best to use the English version to get used to all the functions and build up your library of boot sectors. You can save each one separately or add it to the main library using the "Save All boot sectors" function. The program doesn't check for duplicates and it's easy to fill the library up with them, so delete or move the boot files after updating the library.

To write a boot sector, run the German version. With your latest library, select "bootsektor repaieren" from the menu. Use the up and down arrows on the right to highlight the boot sector to write, click on "bootsektor schreiben" and the disk is back in action.

One word of warning: it is easy for the novice to ruin disks, so be careful out there, okay? If all this virus stuff has you confused, check out last month's *ST FORMAT* feature – or check out page 130 for back issues if you missed that.



● **Eek! call the cops, I cornered one of the little devils. With *Sagrotan* they don't stand a chance.**

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→ DEMOS

OOH CRIKEY WOT A SCORCHER

Wizard PD – Disk BDEM 3

This latest megademo from the Lost Boys features – wait for it! – bouncing balls, wibbly bits, long banal scrolling text and endless credits. All expertly done, but not exactly new. You access the six demos by piloting a craft across a fractal landscape. The last sub-demo really makes this disk a brilliant bit of acid house sample with visuals to match – stunning stuff. You might run this one a few times to impress your friends and it also comes in handy to break the ice at parties. If you find the flying a bit difficult, type in "manchester" and use F1 to F6 to access the sub-demos. One out of six is – er, about 17%, innit?

***STF* RATING – 88%**

● **A spiffing example of the programmer's skill. Getting to *Ooh Crikey Wot A Scorcher's* sub-demos is an art all in itself. Certainly beats moving a sprite around.**

GATEWAY TO HEXENLAND

Riverdene PDL – Disk DEM 942

Here we go again! Yet more wibbly graphics and endless scrolls that nobody can read. You've got to guide a little witch figure around to enter the various sub-demos – wildly original bit, that. There is, however, some good full screen and parallax scrolling stuff that's all very smooth. It's accompanied by manic chip music, but that does leave room for lots of sub-demos. One of them turns out to be a full game of Othello, and it's very well done, seeing as it beats me almost every time. It's a good example of jazzy ST graphics from *The Avengers*.

***STF* RATING – 80%**

INVISIBLE MAN DEMO

Jennix PDL –
Disk JPD 409 (1MByte, Disk 410)

I'm not sure about these mega sample demos – if you really like the music, why not listen to the record and stare at the sleeve instead? This is a two disk demo. The first has a lovely sampled bit of opera and the usual endless credits. The main bit is *Invisible Man* by Queen – not just a snippet but the whole bloomin' song, words and all. A marvellous bit of sampling that shows what's possible with an ST.

***STF* RATING 82%**

BIGEYE

Wizard PD – Disk DEM 160

Bit of a change, this one – there's no scrolling text, no 3D balls, no wibbly bits at all – just flashing kaleidoscopic images like some refugee from a '60s film. Visually stunning, dead groovy and – er, I wrote it. Kept hoping for a review in Public Sector and it never appeared, but now's my chance (manic laughter). If you're into crystals, tie-dye and early Pink Floyd, this could possibly induce a psychotic reaction, sort of.

***STF* RATING 100%**
(NO? OKAY, HOW ABOUT 80%-ISH)

● **Something to eyeball while the sample struts its stuff. Clever compression and coding gives a click-free rendition of *Invisible Man* from this monster.**

● **More hippie nonsense, colour cycling and flashing images in *Bigeye*, including this startled looking person. Interesting alternative to scrolly mega demos.**

The *FORMAT* PD directory

● **Where to go for Public Domain software – demos, games and utilities for around £3 a disk (or even less)!**
Note: if you write to any of these PD libraries for a catalogue, remember to enclose an SAE.
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zydec

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Driving test

Add a second floppy disk drive to your ST and you'll wonder how you ever lived without it! Out of the many ST-compatible external drives, Peter Crush selects the best and examines which ones pass the *ST FORMAT* Driving Test

● They all look much the same on the outside, and inside you're likely to find one of only three or so makes of mechanism – so how can you choose the one for you? Let *STF* help!

Drive B or not Drive B, that is the question. If Will Shakespeare had been able to use an ST he certainly would have added a second drive and written even more prolifically, because they really do increase the speed and convenience of most "serious" software. Your word processor, desktop publishing package or graphics program will run better and faster with a second drive hooked up to your ST. For example, using *PageStream 2* (reviewed on page 42) you can have the main program disk in Drive A (the ST's internal drive) and the Fonts disk in Drive B, the external or second drive. When you load a new font, the program automatically locates it from Drive B, without you having to swap disks in the internal drive. So, it's quicker, easier and more pleasurable to use a two-drive ST system.

Many games – such as *F-19 Stealth Fighter*, *Chaos Strikes Back* and *Wonderland* – take advantage of a second drive, and for quick backing up of your files and software, Drive B makes the going easy. Unless you are in the money and go straight for a hard drive, the addition of a Drive B ought to be your first upgrade.

What types of drive are available? Well, one option is not open – you cannot get hold of an "official" Atari second drive. Nobody has any stocks of these, so third party manufacturers have the field to themselves! The standard internal ST drive uses 3.5 inch floppy disks, so this is the obvious choice for your second drive too. Early STs only had single-sided (SS) disk drives – in other words, the drive could only read or write information on one side of the disk, giving storage space for about 360 kilobytes (K) of data. This typical Atari penny-pinching has caused most owners of early SS drives to upgrade and fit double-sided (DS) drives, thus facilitating the storage of about 720K per disk using the standard format.

Thankfully, for the last couple of years or so all STs have been supplied with proper DS drives. But if your machine hasn't already got one, you really ought to fit a double-sided drive without further delay. Power Computing (☎ 0234 843388) sell a good one – try their PC72001 at £45. As time goes on, more and more software is supplied on DS disks, which cannot be read by the old single-sided drives. All the drives tested here are double-sided.

There are two other types of floppy drives – the modern High Density (HD) 3.5 inch and the old fashioned 5.25 inch drives. The latter take those now old-fashioned large floppy disks that really were floppy – but these are only of any use if you want to run ancient PC software on an ST fitted with a PC emulator, so they are of very limited use.

HD drives are used on the latest PC contemptibles, providing 1.44MBytes of storage space on a disk – about twice that of the normal DS 3.5 inch variety. Atari should have used these on the new TT, but in their usual parsimonious manner they fitted the slightly cheaper standard ones. HD drives need special High Density floppy disks, which should not be used in the standard ST disk drives. HD drives have not established themselves on the ST yet, but as they become more common and more reliable they may well do so. Atari Workshop (☎ 0753 832212) can supply HD drives for the ST. The drive requires a special controller interface and cannot just plug in the back of your ST like the standard drives reviewed here. Another major manufacturer of ST add-ons is currently working on a HD drive too. Watch out for reviews of these gadgets soon in *STF*.

www.stformat.com

Cumana CSA 354 Drive

£69.90 WeServe
☎ 0705 325354

Cumana are a very well known British supplier of drives for all makes of computer. Although this drive is the most expensive model on test, it is the best one in terms of quality of build. The drive mechanism is a Chinon FZ 354, which formatted to a maximum of 84 tracks (more than usual – see the box on page 59) but had a slightly higher than average noise output.

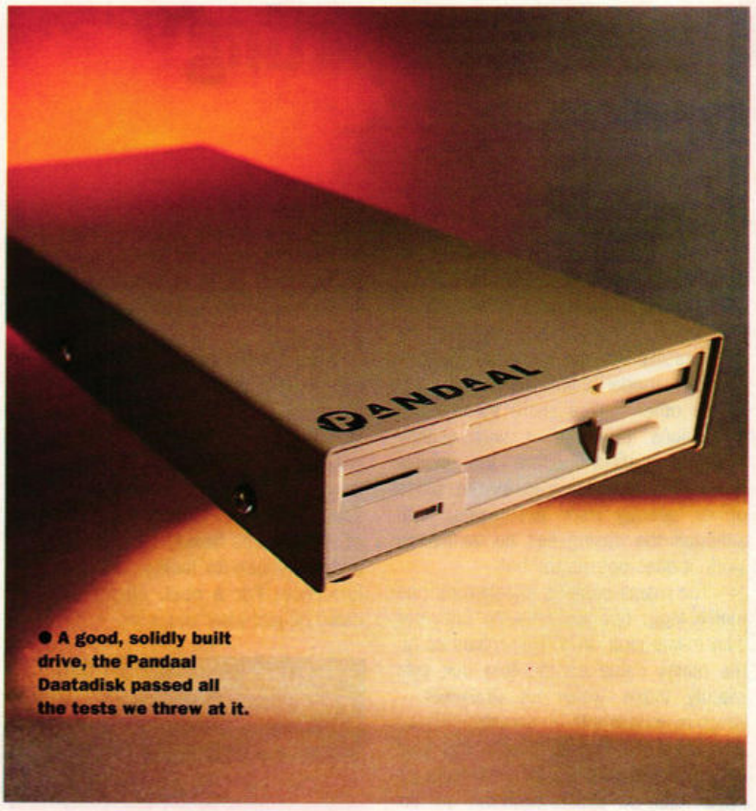
The drive's outer casing is made of a very heavy gauge metal, and is finished in a textured grey that matches the ST's colour very closely. The very good quality power supply unit is situated internally and is the only one of those tested here that has its own fuse. The power cable is secured with a good quality grommet and is a most generous 1,840mm in length.

Apart from the drives with plug-in transformers, this Cumana drive is the only one to have a 13 amp mains cable provided with it, and it's a good quality, moulded-on type with the correct three amp fuse in it. A word of criticism to all the suppliers is that none of them mentioned in their manuals that a plug with this low amperage fuse should be used.

The Data cable is 700mm in length, and all the usual features are to be found – a sturdy On/Off switch to the rear, LED activity light, dust flap and eject button to the front. In use, this drive performed exactly the same as all the others, but what was impressive was its excellent quality throughout. So much hardware is built down to a price, but there has been no cutting of corners or compromises made with this one. In fact, for a unit that just sits on top of your ST desk, it seems to have been built too well – it weighs about half as much again as most of the other drives! But if you are prepared to pay extra for quality, this will satisfy your driving ambition.

FEATURES	85
CONSTRUCTION	95
PERFORMANCE	90
***FORMAT* VALUE 90%**	

● The Cumana CSA 354 scores for its solid construction, good quality internal power supply unit and attention to detail – the correct fuse is included.



● A good, solidly built drive, the Pandaal Daatadisk passed all the tests we threw at it.

Pandaal Daatadisk

£59.95 City Beat
☎ 0234 857777

If you thought Power Computing have some sort of monopoly when it comes to disk drives, you might be half right! Even before you open up the Daatadisk it looks uncannily like the slightly cheaper Power PC720 reviewed overleaf, right down to the serial number sticker. As the box below explains, you might often find many suppliers using the same makes of drive mechanism!

But at least it is refreshing to see good home produced ST accessories when so many high tech gadgets are imported. Interestingly, the drive mechanism is a Sony MFD-11W-00, which looked a little better quality than the other Sony drives reviewed, but this only gave the usual 82 track formatting provided by the others, and had an average noise level. The casing is identical to that of the Power PC720, as are the paint finish, On/Off switch and little rubber feet under the drive. The power supply is via an internal PSU, and a mains lead 970mm long is provided, but you fit your own 13 amp plug. The Data cable is a shortish 600mm long, and the DIN plug at the end is of good quality.

Like most of the other drives tested on these pages, this worked fine, with no detectable eccentricities. The manual, like all those provided by the other makes, was brief but adequate – after all, there is nothing very complicated about connecting up a second drive!

FEATURES	80
CONSTRUCTION	75
PERFORMANCE	90
***FORMAT* VALUE 85%**	

DRIVING EXAMINATION – THE TESTS WE PERFORMED

How do you assess a disk drive? At first sight, the drives on test all look pretty similar. But let's consider the component parts and how they contribute to the overall performance of any given unit.

1 The mechanism At the heart of the machine is the drive mechanism. These are Japanese made and mass produced in their millions. Various makes of drive mechanism are used by each supplier from time to time – Sony, Teac, NEC – so you never really know (not without dismantling the case, at any rate) which particular one you are getting. However, the drives were tested to check their speed and how many tracks they would format to.

2 The casing The mechanism is housed in a casing produced by the different suppliers, but almost invariably metal and grey in colour! We checked the colour, finish and neatness of the casing, plus the placing and quality of switches, display lights and so on.

3 Power supply The drives can either be powered by a plug-in lead from a small separate transformer, or with a built-in power supply unit taking power from the mains. Built-in PSUs are neater, but add to the cost.

4 Data cable All the drives simply connect to the ST via a data lead which plugs into the 14 pin DIN plug at the back of the ST marked "Floppy Disk." The length of cable and its quality are important considerations.

5 Noise Although all external drives seem to make more noise than the ST's internal one, none of those tested were excessively noisy, and it is reassuring to hear them clicking and whirring – you know they are working!

6 Price We weighed this important consideration up against the features offered by each drive to arrive at an overall *FORMAT* value-for-money rating.

→

www.stformat.com

Power Computing PC720 Drive

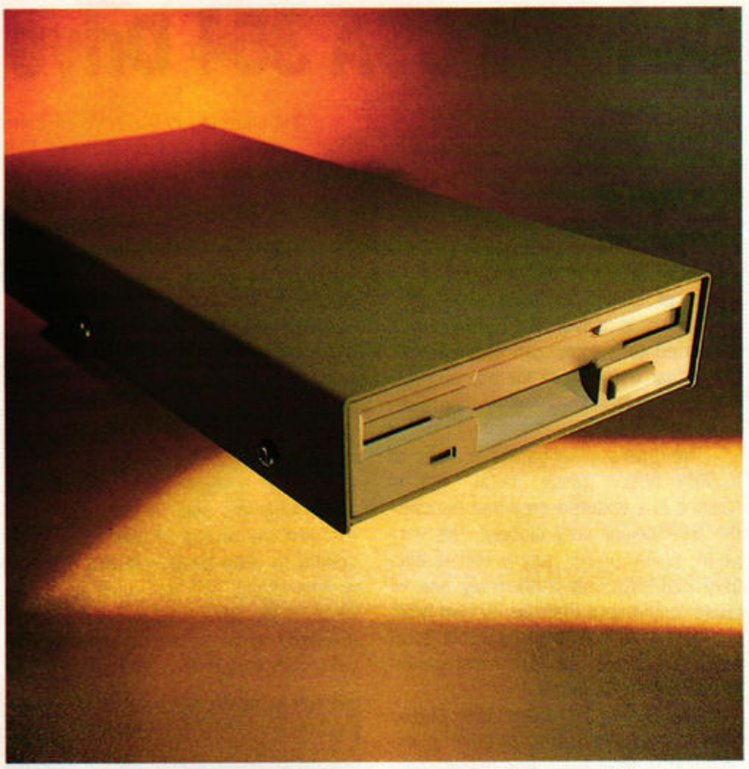
£55 Power Computing
☎ 0234 843388

The drive mechanism in this unit is the Sony MPF 110-01 model, and formatted to 82 tracks. The casing is a textured grey metal. The width and height of the drive casing are the same as Power's economy model (page 59) and, in fact, all the other makes share these small dimensions too, but it was slightly longer to accommodate the built-in PSU. This compact transformer takes power directly from the mains, and, although the casing has no ventilation slots, it does not run too hot.

The mains cable is a generous one metre long, but you have to put your own mains plug on it. One minus point: the mains cable on the test unit was slightly loose within its grommet – which is undesirable on a cable carrying 240 volts! In fairness, though, this fault is not evident on other identical units we have seen, so this is probably an isolated fault. Drive noise seemed to be a fraction more than that from the identical mechanism in the Economy version, so no doubt there is even slight variation between drives off the same production line.

The mains switch is a small rear mounted metal toggle switch, and on the front panel there is the disk entry slot, which has a dust flap, and an LED activity light that comes on when the drive is running. The data cable is a reasonable 770mm long. We've used one of these drives heavily for nearly a year and can vouch for their trouble-free performance. For a neat, cheap drive, it could be just what you want.

FEATURES	80
CONSTRUCTION	75
PERFORMANCE	90
***FORMAT* VALUE 85%**	



● The Power PC720 is a neat, reliable and reasonably priced unit, but the casing has no ventilation slots and the fitting of the test unit's mains lead was imperfect.

● The competitively priced Zydec drive performs well, but the switch is dodgy and it's a little noisier than the average.

Zydec Drive

£54.95 Evesham Micros
☎ 0386 765500

This is an imported unit, using a Citizen OSDC-41C drive mechanism which can format to 84 tracks but has a very slightly above average noise output. The casing is metal, with ventilation slots in the top – but these seem superfluous in view of the fact that there is no power supply unit inside the casing which needs cooling.

The grey textured finish is a pretty good match to the ST, although it is perhaps a little darker. The power supply is via an external adaptor which plugs into the mains, but the On/Off switch is a poor quality plastic slide-type which is too small and not very robust, so is best left permanently On.

The Data cable is a good 890mm long, and, also in its favour, the drive comes complete with a larger and brighter than usual activity LED, a dust flap, and a 12 month warranty. Only the dodgy switch detracts from this drive, which otherwise performs well and and is competitively priced.

FEATURES	80
CONSTRUCTION	75
PERFORMANCE	85
***FORMAT* VALUE 80%**	

Roctec RF 302R Drive

£59.99 Ladbroke Computing
☎ 0772 203166

Another imported unit, but like the Zydec drive from Evesham Micros supported by a leading retailer. The drive mechanism is a Sony MPF 110-05; this formats to 82 tracks and has an average noise output. The casing is grey metal, with ventilation grilles on the top.

The power supply is via a separate transformer which plugs into the mains and has a lead feeding into the back of the drive. The On/Off switch, also on the rear of the drive, is a plastic toggle type and of good quality. However, this drive exhibited a small foible not evident on others tested: with the switch Off, the ST would not boot! Although Drive A would run, it could not seem to read anything from the disk in it, and just spun on aimlessly. Switching the Roctec Drive B On immediately remedied this; the ST booted up and all was well. Since On/Off switches on disk drives are best left On anyway, this is not a serious drawback. In all other respects, the drive performs well, and is equipped with a 760mm long Data lead and all the usual features: rubber feet, dust flap and LED activity light. The drive was used in the preparation of this article, and performed well.

FEATURES	75
CONSTRUCTION	75
PERFORMANCE	85
***FORMAT* VALUE 78%**	

● The Roctec drive performs well in every respect, but seems to command an undue share of the ST's attention.

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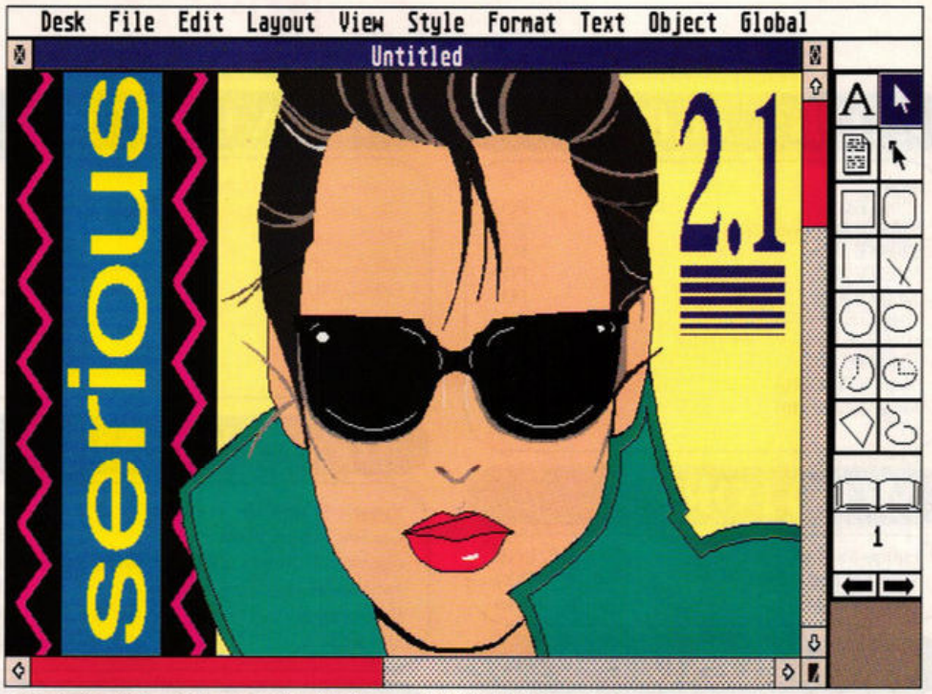

Actual PageStream 2.1 screen shot. PageStream is ST/STE/TT compatible.

Have you ever been envious of all the neat DTP programs for the Mac? They have all those great PostScript fonts, multitudes of clip art and with Adobe Type Manager they don't have screen-jaggies. "Sure, we didn't have to mortgage the house to buy a computer, but it would be nice to have all those fonts."

SAY NO TO MAC ENVY

At Soft-Logik, we have a cure for Mac envy. We call it PageStream 2.1. Do you want PostScript fonts? PageStream lets you use any PC format PostScript font. Plus, PageStream can print PostScript fonts on your dot matrix, inkjet, HP or Atari laser printer!

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LOOK MA, NO ATM!

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MONITORS

Philips 8833 II	£229.00
Atari SM124	POA
Atari SC1224	POA

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Power PC720B Drive

£65 Power Computing
☎ 0234 843388

This is a brand new disk drive from Power Computing, the "B" standing for "Blitz." The unit tested was a pre-production prototype, but the drive is now being manufactured and there may be some slight differences to the finished article. The drive mechanism in the reviewed unit was an Epson SMD 300, which could read and write up to 84 tracks, and its noise output was about average. The outer casing was a cream coloured moulded plastic one, but the base onto which all the components are mounted was metal.

The power supply to the unit was via the ST's joystick port, using a lead like that provided with the PC720E reviewed on this page, but Power Computing are likely to offer an external transformer PSU as an additional option. The Data cable was 750mm long and terminated in a good quality plug.

On the back of the unit are two slide-type switches, each with three positions. The first switch is marked "1/0/X" in engraved lettering. When switched to Position 1, the drive is On and it operates normally. In Position 0, the drive is Off. In Position X, the drive is On and booting from Drive B is enabled. Normally, you must have your boot disk in the ST's internal drive A, but using this option appears to disable Drive A and enables the ST to boot from Drive B. Moving the switch back to Position 1 re-enables Drive A without having to reboot. Power claim that this feature works with most STs, but do not guarantee that it works on all machines. All three positions of this switch worked correctly on the ST used for testing.

The second switch is marked "A/0/B." Position A switches the drive to "Virus Blocker" mode, all Write accesses to track 0 of both drives being blocked, effectively write-protecting them. In Position 0, the drive operates normally as a standard ST drive. In Position B, the drive is in Blitz mode, and can perform high speed disk copying from Drive A to Drive B. This is a very interesting and potentially useful disk drive; it can function as a completely normal one, or can be used in its other modes at the flick of a switch or two.

FEATURES	90
CONSTRUCTION	85
PERFORMANCE	90
FORMAT VALUE 89%	

HOW DO THESE DISK DRIVES WORK, THEN?

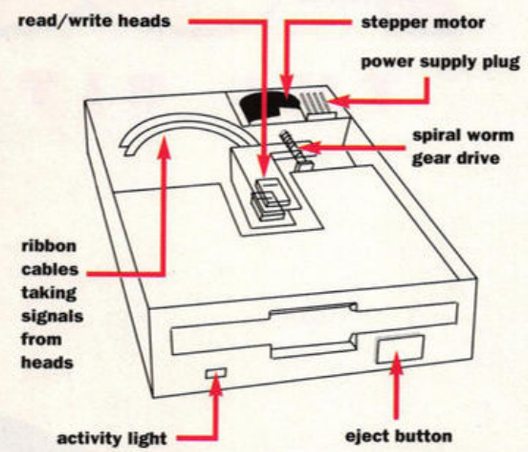
Originally developed by Sony, the 3.5 inch disk drive mechanism is a little masterpiece of clever engineering. It has an electric motor which spins the disk at 300 revolutions per minute – a heavy flywheel helps keep this speed constant. There are two recording heads, like those found in tape recorders – one on each side of the disk.

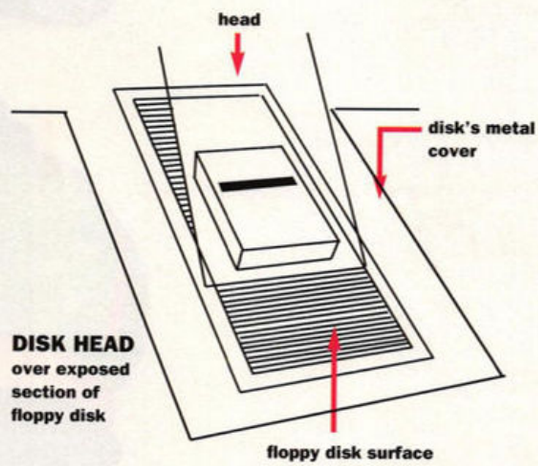
The surfaces of all floppy disks are coated with an iron oxide material similar to that used on recording tape. Data from your ST is recorded magnetically onto concentric tracks on the disks. These tracks are not like the single spiral groove on a gramophone record, but individual and complete circular rings, one inside the other on the disk's surface. These tracks are created when you format a disk; using the standard format you get 80 tracks on each side. All 3.5 inch disk drives can accommodate up to 82 tracks, though some are capable of fitting in more, the usual maximum being about 85.

To access the data on these tracks (or to write it in the first place), the drive's heads are moved in small increments across the surface of the disk by a stepper motor. This can move the heads very small distances, and causes the clicking you hear when a drive is in use.

Data is not recorded in a continuous linear fashion on the disk in the way a tape recorder works, but in little chunks here and there all over the disk. This gives the heads "random access," making data much quicker to find. All reading and writing operations to the disk are governed by a controller chip in the ST, and this limits the speed at which data can be loaded or saved, so no floppy drive is faster than the others in this respect. The Western Digital 1772 chip used in the ST is capable of controlling only two drives, hence the maximum the ST is limited to.

All drive mechanisms, from whatever manufacturer, are of identical overall physical size, being standardised so that even the bolt holes for attaching them into position are in exactly the same places, making them interchangeable. The plugs and sockets on the back of the mechanisms which take power and data connections are identical between makes too, which is very convenient if you have to swap or repair a drive.



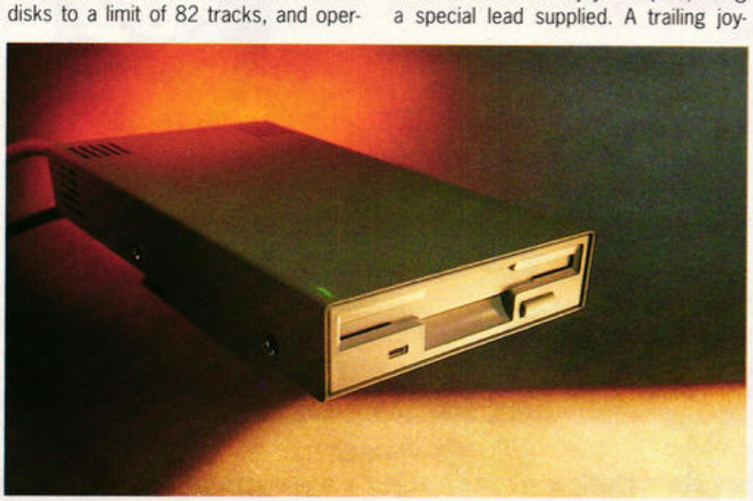


Power Computing PC720E Drive

£45 Power Computing
☎ 0234 843388

The power PC720E is the cheapest external drive available – E for economy? It uses the same Sony drive mechanism as the PC720. It reads and writes disks to a limit of 82 tracks, and operates correctly at 300 RPM with average noise output. The outer casing is metal, finished in a textured grey colour – very closely matching the ST. There is no power supply unit: power for the drive is taken from the ST's joystick port, using a special lead supplied. A trailing joystick socket on the same lead assembly enables the re-connection and normal use of your joystick. The arrangement is a bit complicated, but it's not as awkward as it sounds.

The Data cable is an adequate 840mm long, and the plug connecting it to the ST is of good quality. There is a plastic On/Off toggle switch at the rear of the drive, and the front panel is the same as the PC720's. When tested, disk entry and ejection were smooth enough, and generally the drive was well behaved. If the thought of powering it from your ST's joystick port worries you, the same drive is supplied with a small plug-into-the-mains transformer PSU as Model PC720P for an extra fiver. If money is tight, these economy models are a very low cost way of getting a good second drive. ***stf***



● The Power PC720E is virtually identical to the PC720 but draws its power from the ST's joystick port – a bit Heath Robinson, but it's cheap and it works effectively.

FEATURES	70
CONSTRUCTION	80
PERFORMANCE	80
FORMAT VALUE 69%	

MAGIC POCKETS

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SCREENPLAY

It's an emotional time for us when it comes to writing the Screenplay pages. If only you could see the tears, the rage, the frustration. Eventually, though, we find a spare plug socket and we can all rest a little easier in our cages

The *ST FORMAT* reviewers: hand-picked from an elite squad of Guatemalan guerillas

ED RICKETTS
Shabby round the edges but freshly baked and still a bit wet, with a slight squirrel fetish and a fear of spoons.

CHRIS LLOYD
Not at all afraid of spoons, but slightly wary of Belisha beacons. Enjoys painting the town apple white.

JAMES LEACH
A man with no morals, no fingernails and a large collection of Austrian portraits. When pushed, falls over.

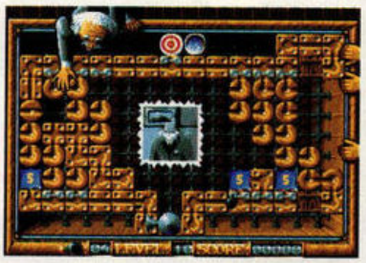
MAFF EVANS
Altogether splendid fellow and well-known muso. Laughs at spoons but quivers before orange peel.

STUART CAMPBELL
Makes no secret of the fact that's he's Scottish. What most people don't know about is his triskaidekaphobia.

NEIL WEST
Was once mistaken for Patrick Moore, but is reticent about giving away further details for fear of prosecution.

62 RAILROAD TYCOON

"Get your notebooks out! There are some 2-6-0 Moguls, 4-6-2 Pacifics and 4-4-0 Claud Hamiltons coming." "Swap you my F3-A Class for your Bo-Bo-Bo RE Class 6/6!" Yes, *RT's* here at last and it's not just for trainspotters.



67 BOSTON BOMB CLUB

There I was, minding my own business and rolling bombs around this billiard table (trying to avoid the baby and the trumpet player and get them into the toilet), and I was busted for unnatural practices. Free country? Hah!

73 PITFIGHTER

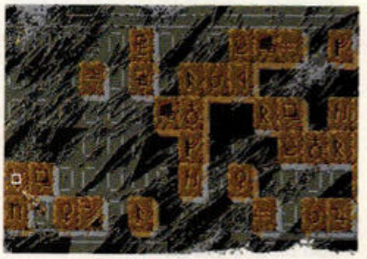
So what do you think – the studded gleaming leather wet-look brace and girdle, or the bully big-boy diamante helmet and matching jockstrap? Or just pyjama bottoms? It's so hard to know what to wear to these pitfights!

75 EXILE

Indulge your wildest fantasies and become a bounty hunter on the edge of time, with the mystical powers of Zor at your command and a Great Dane by the name of Albert by your side. Alternatively, you could play *Exile*.

78 THUNDERHAWK AH-73M

Thunderhawks are go! Well, one of them is, at any rate. Core Design's brand new flight sim rears its really quite good head and prompts comments like "Coo! You can't see the strings after all!" Or not.



69 SARAKON

Sarakon – the game they're calling "the new puzzle game from Virgin" and "the game with the title no-one knows the meaning of, save some marketing people deep in the heart of London" – is here and begging to be reviewed!

SCRUTINISED THIS MONTH

THE ADVENTURES OF MADDOG WILLIAMS IN THE DUNGEONS OF DURIDIAN	89
BOSTON BOMB CLUB	67
DR FOX'S 1991 FOOTBALL ANNUAL	86
EUROPEAN SUPERLEAGUE	86
EXILE	75
GRANDSTAND	88
HOME CASINO POKER ETC	88
INTERNATIONAL CHAMPIONSHIP ATHLETICS	70
MONSTER BUSINESS	86
PITFIGHTER	73
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SARAKON	69
THUNDERHAWK	78
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SCREENPLAY EXTRA	86

STF REVIEW POLICY

- It is *ST FORMAT* policy to review only finished games – that is, the games you could buy in the shops – never incomplete or demo versions
- We review *all* games released, but *only* when they're finished. We won't be rushed into reviewing unfinished games to beat our "competitors"

COMPLETE SOLUTION TO *CODENAME: ICEMAN* ● GET TO GRIPS WITH *ELVIRA* ● THE PAYOFF IN *CADAVER* ● PLUS OVER A DOZEN MORE GAMES CRACKED – PAGE 90

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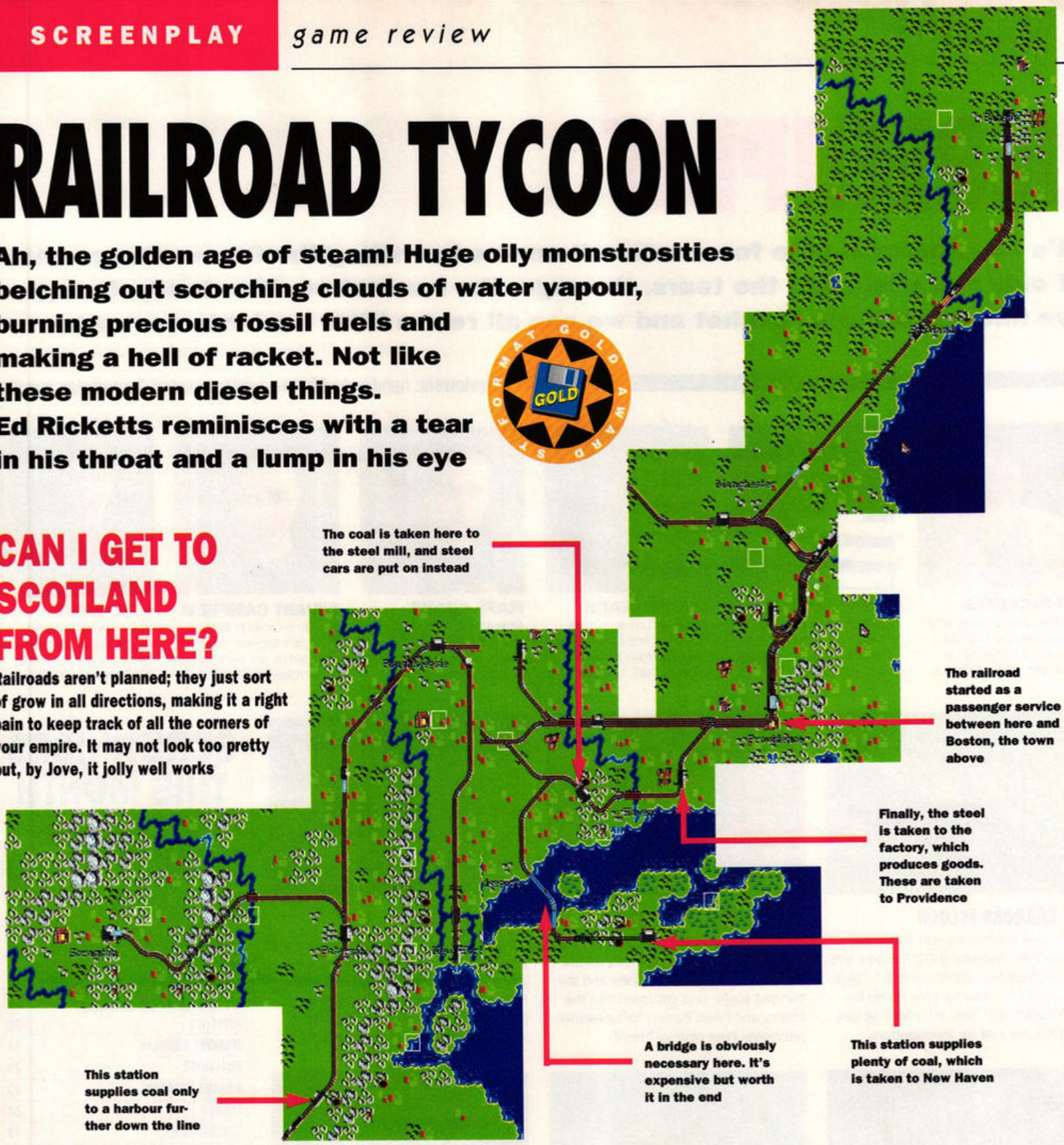
RAILROAD TYCOON

Ah, the golden age of steam! Huge oily monstrosities belching out scorching clouds of water vapour, burning precious fossil fuels and making a hell of racket. Not like these modern diesel things. Ed Ricketts reminisces with a tear in his throat and a lump in his eye

CAN I GET TO SCOTLAND FROM HERE?

Railroads aren't planned; they just sort of grow in all directions, making it a right pain to keep track of all the corners of your empire. It may not look too pretty but, by Jove, it jolly well works



Your mother always warned you it would make you go blind but you still carried on with it, didn't you? Trainspotting, that is. And now you've got 300 notebooks full of useless numbers which you can't bear to throw away because of their sentimental value.

If you were one of those anorak-clad notebook-clutching acne-ridden sad-faced bespectacled wretches who got all excited if someone even mentioned a Double 0 gauge, *Railroad Tycoon* is the game for you. Actually this does a grave disrespect to the game (but not to the trainspotters – yuck), because if it had to be pigeonholed, it would be as a god game.

Your ultimate aim is to build a railroading empire and retire a rich man. Four game worlds are available: Eastern and Western USA, Europe and good old Blighty. The resources, services and goods you exploit or produce with your RR depend on the world you select. The USA has a large percentage of cattle ranches, for instance, while these are absent in Europe and England. In addition, each world begins in a different year, corresponding to the real year of railway introduction to that country. In England you start in 1830, with only a very basic locomotive to power your trains. In Europe, a game begins in 1900, when more sophisticated engines have been invented.

The four gameworlds begin in different years, corresponding to the real years of railway introduction to each country

To earn revenue in *Railroad Tycoon* you transport goods, passengers and mail from a station that supplies them to a station that wants them. The receiving station then pays your railroad for your trouble. The amount of revenue earned depends on the speed and size of the cargo you deliver. For instance, the revenue for delivering mail increases the quicker and further you can deliver it. This effect decreases with each class of cargo, so it's slightly less important with passengers, even less with Fast Freight, and so on down to Bulk Freight, which is paid for strictly by quantity – speed of delivery doesn't matter (just as in real life).

The basic unit of any railroad is, of course, track, and you usually begin by

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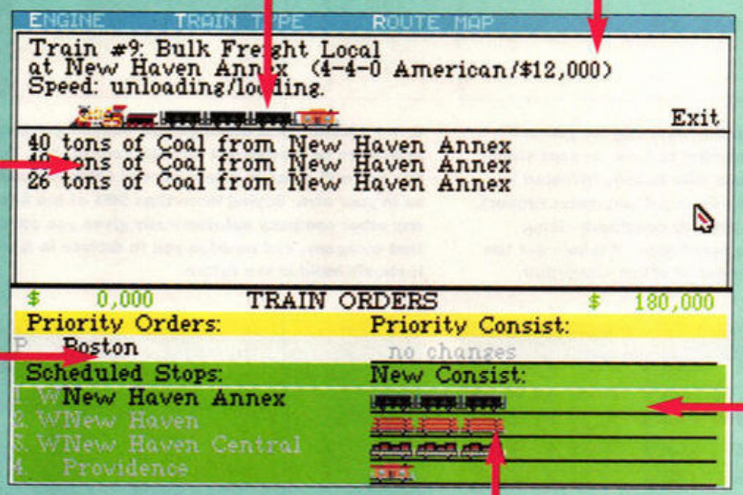
I'LL GIVE YOU MINE IF YOU GIVE ME YOURS

Success in *Tycoon* is achieved by responding to supply and demand. One city may demand food, while supplying mail. If you can find a city nearby that supplies food and is big enough to demand mail you can set up a nice little run between the two, ferrying goods between the two cities and becoming the local hero.

1 Before you build your track you should survey the area, particularly if you're close to mountainous areas. The survey shows the elevation of each square. Building through steep areas bumps up the track's grade and slows down every train that uses that section, so it's advisable to work around hills or build a tunnel.

Icons to show the train's current Consist (in English, what it's carrying)

Train number, its name (if any), its current location, the type of engine it has and its yearly maintenance cost, where it's headed and at what speed



Verbal description of Consist

Priority Orders and Consist. The train leaves its normal route and heads to this destination if it's set, usually to pick up a Priority Shipment

The train's scheduled stops. The W means Wait For Full Orders – the train won't leave the station until its cars are completely full. For bulk freight this is the most profitable method, since the revenue earned doesn't depend on the speed of delivery

2 Having decided on your route, the next stage is usually to build a new train and set its destinations. The train orders screen makes this process easy – although it looks complicated at first, familiarity breeds content and you find you spend a lot of time here.

The Consist – which cars (goods, mail, passenger and so on) the train takes on at each stop

3 To help you find likely areas in which to build stations, you can call up the resource map. This represents sites of supply and demand by letters and colours, so you can supposedly tell at a glance where it's profitable to build. In practice, the map needs a bit of careful studying before you can understand it well enough to benefit from it.

4 Once you've built a few stations, shipping reports (the white boxes with an arrow to each station) give you an instant appraisal of the current supply and demand situation at each one. The horizontal lines represent demand for each class of goods (mail, fast or slow freight and so on) and the small cars show goods ready to be picked up.

5 With the track laid, the next step is to build stations at the points at which you wish trains to load and unload. There are three sizes of station – the Terminal is the biggest and therefore has the largest economic radius, but it costs a hefty £200,000.

6 If the train, when it reaches its destination, is the first delivery of its type that you've made on the railroad, you get this congratulatory screen showing the revenue earned for the delivery. Don't get too smug, though, because from then onwards it's business as usual.

laying it from one city to another. Naturally, every piece you lay costs you. At any point along a piece of track you can build a station. Its economic radius depends on its size and so, its price. The supply and demand for a particular station is determined by the resources and industries inside this radius, so the larger the radius, the larger the supply and demand is likely to be.

Each station (and each signal tower when you build them) has a set of signals that govern which trains are allowed to pass through, and which have to stop and wait. With the difficulty level set low, you can leave the operation of the signals to your dispatchers, ensuring that no train crashes can ever occur. At higher levels, you have to monitor the signals yourself. Although they do run safely on their own, there may be times when stepping in and changing their operation would result in the trains running faster and, therefore, more efficiently. If you're not careful this can lead to expensive and reputation-damaging crashes.

While you're trying to make an honest living, your competitors are doing the same. Again, on lower difficulty levels, you don't have to worry about them too much – they won't attempt to take you over, block your railroad or buy too many of your shares. At higher levels they do all of these things.

The graphics aren't spectacular (ported as they are from a PC) but they do display everything you need to know, although sometimes the various icons for the industries can look a little samey and necessitate some manual-flicking. The trains are incredibly cute – though small – and each has its own little puff of steam as it chuffs its way around the track. The linking screens are as colourful as they can be within their limitations (it's hard to make a list of figures look interesting) and the world maps are convincing enough. Every time a train passes through a station, it gives a small whistle to let you know. As you clock up the revenue, you hear the clatter of coins – well, they're supposed to be coins but they sound more like a →

The trains are incredibly cute and each has its own little puff of steam as it chuffs its way around the track

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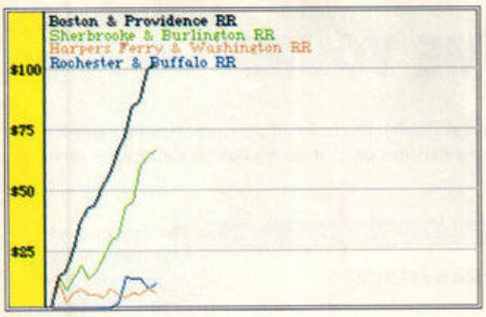
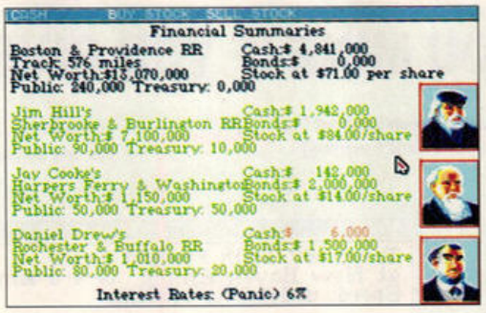
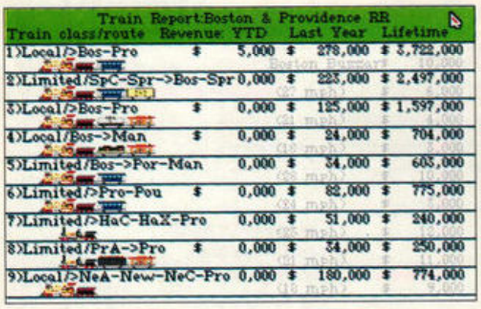


● While you're laying a tidy nest egg for yourself, you should always remember to think of your stockholders. They're the ones who initially invested in your railroad, giving you financial and moral support, and unless your share price is constantly rising they're not going to be very happy. If things get too bad, you can be thrown out of office altogether.



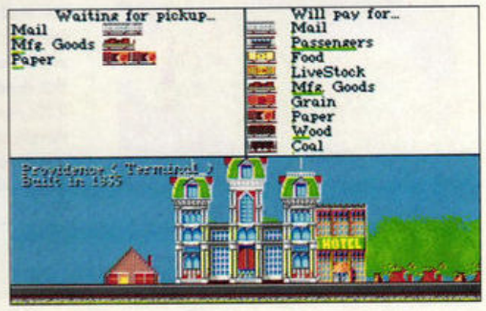
● Any stockmarket dealings you want to get involved in have to be carried out through your broker. You can buy and sell stock in other railroad companies as well as in your own. Buying more than 50% of the shares in any other company automatically gives you control of that company, and enables you to dictate to it where it should build in the future.

● This is the sort of message you don't want to see too often. After a train crash, especially with this sort of adverse front page publicity, your customers lose faith in you (not that you can really blame them, can you?) and most of your business is lost by nervous industries moving away from your stations. All this and there's that wrecked train to cope with, too.



● Once you have a few trains up and running you can see which ones are making the most dosh on the Train Income screen. If a train's revenue doesn't justify its maintenance costs, then it's hardly worth keeping and you should either alter its destination and Consist or scrap it altogether.

● Although you're shown your balance sheet at the end of each fiscal period, you can access it at any other time too. Any figures printed in red should worry you – they're negative. Because it's the start of the year and no revenue has been yet earned, the YTD (Year To Date) profit is actually a deficit.



● As your trade increases you have more money to spend on improving your stations. Here a hotel has been added to take advantage of the heavy passenger trade at this station, together with a maintenance shop to reduce the maintenance cost of any train passing through here.

Because the game map is randomly generated for each game, no two games are the same and you're always forced to change tactics

doorbell. And yes, there is a chuff-chuff noise, but it's distinctly ropey and only heard when you start a new train.

VERDICT: Microprose have a habit of producing massive games with manuals at least the size of Wales and fiendishly complex gameplay. This is one of them. *Tycoon's* manual includes a complete history of railroading, an explanation of how a steam engine works and biographies of the great past tycoons. Oh, and it tells you how to play the game too.

Tycoon, more than most, is a game that benefits from careful manual study and lots of practice. Even on the lowest difficulty level there's a lot to learn and your first attempts at a railroad empire will probably end with you in ruins. When you eventually become familiar with the concept of supply and demand, where to build track and which trains to run, the game really comes into its own.

One of the game's main strengths lies in its flexibility. If you just want to criss-cross the whole of America with your railway, you can concentrate on building. If you're more interested in stock market dealing, you can let your competitors do the work and then take them over. Because the game map is randomly generated for each game, no two games are the same and so you're always forced to change tactics.

Railroad Tycoon is not a game for the faint-hearted or those who like quick starts. Your time and effort investment will be well rewarded, however, when you find a hugely enjoyable, complex and fascinating game lurking beneath its accountant's exterior. Trainspotters of the world, unite (and buy this game) – you have nothing to lose but your acne and your anoraks!

ED RICKETTS

RAILROAD TYCOON

MICROPROSE £34.99

1MByte only – double sided drives

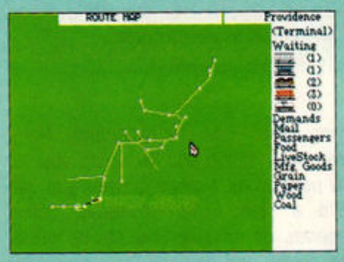
- Similar to *Sim City* but – heretical though this sounds – more complex and enjoyable.
- The first game to incorporate trains in a real game with real interest.
- Graphically, could be *Sim City's* clone

STF RATING 93 %

DOESN'T TIME FLY BY WHEN YOU'RE THE DRIVER OF A TRAIN

From the train orders screen there are several other options available to you. The train's type can be changed to Local, Through, Express or Limited – this dictates which stations (other than the scheduled ones) the train stops at. Or you can see information on any currently available engine, and study the train's route.

● The engine information screen is perfect for trainspotters, displaying as it does loads of figures and unintelligible wibble about gauges, power at drawbar, etc. It's indispensable when you're deciding which engine to use for a particular train, because the newest and flashiest make isn't necessarily the most appropriate.



● The train's route can also be displayed relative to the whole network. Trains can only reverse direction at a station – an obvious point, you might think, but one to bear in mind if a train has to go to a non-revenue-earning station just to turn around, in order to reach the station it was originally bound for. Tough, innit?

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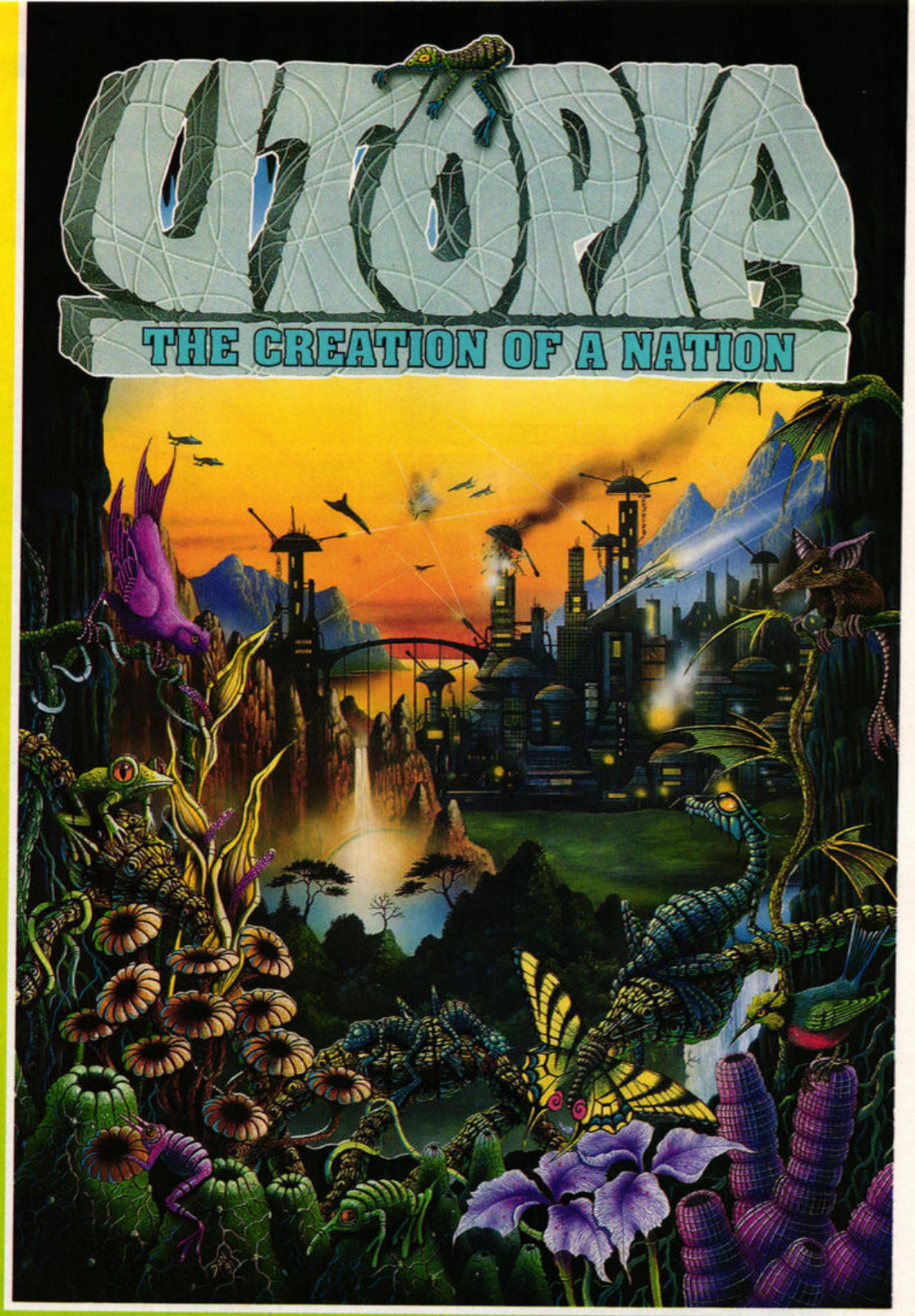
Screen shots from various formats.



SUPER STAR "The best game Gremlin has ever released." **94%**

THE One "A cross between Sim City & Populous." **93%**

GAMES-X GAME OF THE WEEK "Utopia is an excellent game."

AMIGA COMPUTING GAMER GOLD **93%** "The next Generation in Godgames"

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Can you create Utopia? Now's your chance to find out. Leading a colonising party to a barren planet you aim to create the perfect society, where everyone has a quality of life rating of 100%. Do you spend your money on weapons or social research? Build hospitals or tank factories? The myriad of decisions to be made are yours, and the fact that there are over ten different alien races all bursting for the opportunity to wipe out the colony should speed up the decision making process. An icon driven game with the main playing area presented in isometric 3-D, Utopia breaks new ground in computer entertainment.

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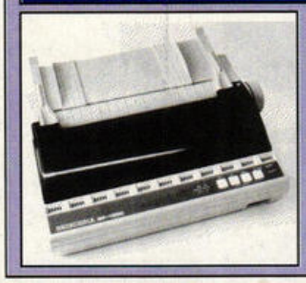

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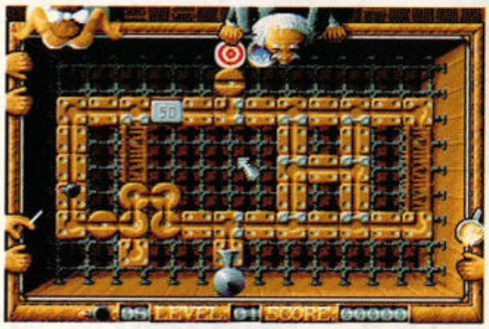


● Like most intelligent, completely normal people, you've probably had the urge at one time or another to roll bombs around a billiard table. Well, now there's a game which caters for every fantasy you've dared to imagine – *The Boston Bomb Club*. This is not the sort of place you'd want to take your mother to!

● The title screen also acts a difficulty selector. From left to right, the old fogies represent progressively higher starting points. So, clicking on the furthest left bloke starts at level 1 and the furthest right at level 13. Clicking on the bomb changes the length of the fuse, in effect altering the time limit for each level.

● As if the levels weren't difficult enough as it is, some of them have other distractions to put you off bomb-routing. On this screen, teasingly called Baby's War, a baby inexplicably crawls onto the table now and then, steals some of your bombs and crawls off again. Totally weird!

BOSTON BOMB CLUB

● "A man with squinty eyes gave me this bauble for my Christmas Tree."

Once upon a time, in the late nineteenth century, there was a group of mad scientists who spent their evenings rolling bombs around a converted billiard table. But then you knew that. Everyone's heard of the *Boston Bomb Club*, haven't they?

Well, no, not until now. Of course, all this is a feeble plot for Palace's new puzzle game. It's composed of 30 levels and on each you're presented with an overhead view of the billiard table. The table is divided into tiles, each of which affects the path of the bomb in some way.

The simplest tile is a channel which allows the bomb to roll along it. Other tiles may have right hand turns in them, or gates to block the ball. Clicking on some tiles changes their orientation, so, for example, the right hand turn rotates 90 degrees.

Your job on each level is to make a safe route to the target for the bombs that pop out of the bomb generator, by arranging the tiles suitably before the bomb reaches them. The hazards are many. If routed incorrectly, the bombs can drop off the edge of tiles into oblivion. Any bomb that touches another causes them both to explode, and a bomb left on the table for too long explodes of its own accord. Every bomb you get to the target is carried onto the next level, until eventually you don't manage to get any in at all. Then it's game over time.

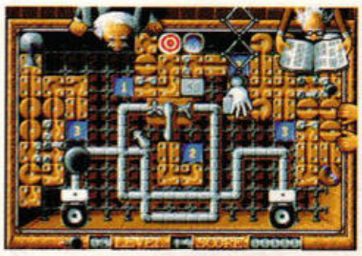
Surprisingly for a puzzle game, the graphics look as though they've had more than 20 minutes spent on them. There's some nifty animation as the characters around the table drink their beer, read their paper and blow their trumpets. The music, too, is bearable for more than three seconds; it's sampled and even vaguely catchy.

VERDICT: *Boston Bomb Club* has a greater potential market than most puzzle games, simply because of the way it's been presented. Because it has a plot – as well as the old men, the silly distractions and the weird elements – the game has more meat than if it was presented solely as a puzzle game. Being French, it's weird and stylish, as well as suffering from what must be translation errors.

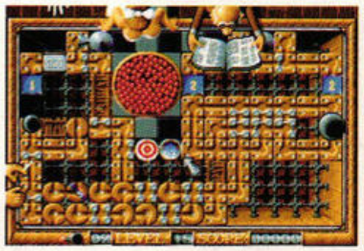
In the end, though, it is just a puzzle game, and a hard one at that. Even by the time you reach the third level you'll be having problems. This is partly alleviated by the level skip feature, but that doesn't make the game any easier.

Boston Bomb Club is an excellent example of how a simple concept can be made more interesting, but it's not going to win any awards.

ED RICKETTS



● Another of the game's obsessions is toilets. Several levels feature the loo quite heavily. The idea here is to roll the bombs into the first toilet. They then roll through the piping connecting them, for no very compelling reason, and out the other toilet. Again, weird.



● Your companion weirdoes don't exactly help you very much. As well as reading their paper at the table – hiding important tiles which you can only see when they turn the page – they do things like occasionally reach in and change the orientation of some of the tiles – usually the most important ones.

TILING FOR BEGINNERS

Every screen is composed of the same tiles, but not all the tiles are present on each screen (it would be a bit crowded if they were). Just knowing what each tile does is a step in the right direction.

Channel – does nothing but funnel the bomb in the direction it's pointing

Fixed channels – these annoying little blighters can't be changed no matter what, so you just have to work around them

Rotating right angle – rotates 90 degrees every time you click on it

Trampoline – sends the bomb off in the direction it's going, the same number of squares as are on the trampoline. Ideal to bridge gaps

Gates – three sides have openings and a gate is on the fourth. Alter the position to block or allow a ball through. Some gates are fixed

Bonus squares – these occasionally appear in awkward places. Rolling over them gives you the displayed bonus

Random channel – randomly changes to either a straight channel or a 90 degree channel, in any direction, when you click on it

Bridge – only one bomb can use each bit of bridge, 'cos they disappear after use. Again, very annoying

Rotating channel – similar to the right angle

Target – this is the bit you want to hit on each level

BOSTON BOMB CLUB

PALACE £25.99

Double-sided drives only

- Very similar comcept to Rainbow Arts' *Logical*, but more involved
- Better graphics than most puzzle games, such as *Atomino* or *Tetris*
- Unlike *Tetris*, has a plot and embellishments to the main aim
- More difficult than games like *Puzznic*

STF RATING 76 %

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SARAKON

Thousands of years ago, when we Europeans were still clubbing each other with leopards' femurs, the wise and completely together Chinese were inventing games of subtle skill and lightning reactions. One such is called Shanghai. The idea of this ancient puzzle game is first to cover a grid with pairs of tiles at random, then remove them one pair at a time until not a single one is left on the grid. Now the game has arrived on the ST in the shape of *Sarakon*.

What makes this computerised version harder, though, is that the pairs removed must either be adjacent to each other or must be able to be connected by a line which doesn't pass through any of the other tiles. Also, this line mustn't have more than two right-angles in it – this one's the killer.

The tiles are also stacked on top of more tiles. How many layers of them there are depends on the level you've attained. The multi-layers either make things easier or harder depending on the difficulty selection you make at the start. In easier mode you can match up tiles from different layers (as long as the matching-up rules are still adhered to). On the harder level you can't.

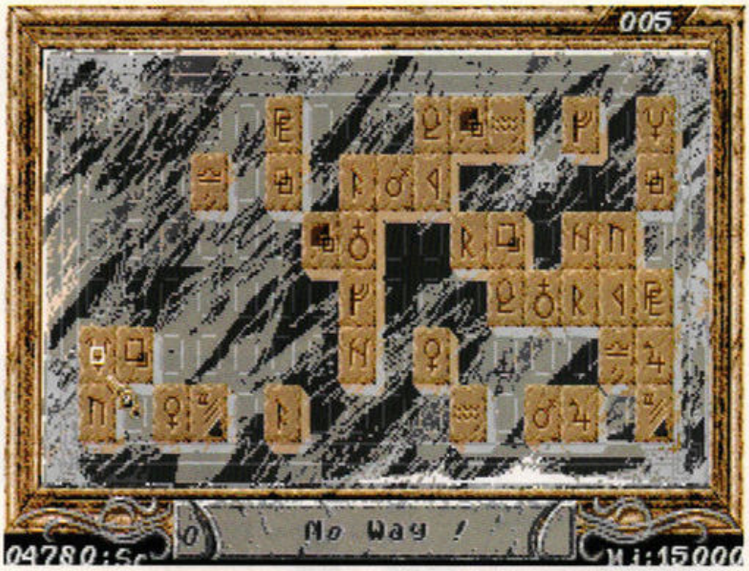
It's a simple game, especially once you've played it once or twice and got the hang of it, but to spice up the proceedings there is a time limit per level. This is the crux of the game. You don't get multiple lives or extra credits, and if your time runs out before you can clear all the tiles you've lost.

Simple enough, but is it addictive? Yes, it's addictive. You carry on playing *Sarakon* because you know exactly what you're doing but you keep getting confounded by the time limits – which get particularly stiff after you've completed the first one or two levels. It's a real test of mouse control, and if you're stuck with the old Atari armadillo which came with your ST, buying *Sarakon* might be the perfect excuse to upgrade to a better mouse.

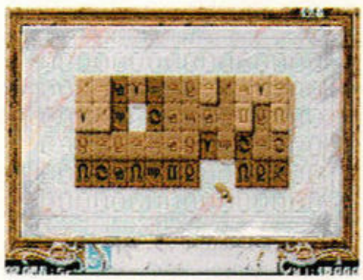
The game doesn't contain much variation, but if you're a fan you won't want any. To break up the pressure, however, there are bonus screens where you just collect as many pairs as you can in the time allowed.

VERDICT: Puzzle game fans will like *Sarakon*. It's a finely-written program and its strength lies in the simplicity of the task pitted against the time limit and the players' reaction times. One fault is that on later levels some tiles look very like others. If you don't have excellent eyesight and a good monitor you might feel cheated by those almost indistinguishable differences. If you have both, though, *Sarakon* is addictive enough to keep you glued to the one until you begin to lose the other.

JAMES LEACH



● **Five seconds to go and you're in a bit of trouble. There just don't seem to be any pairs left here anymore. This is when *Sarakon* hits you.**



● **In this screen there are three levels of tiles. Whether you can pair up tiles on differing levels depends on the game format you selected at the start. Obviously if you can pair them up it makes the game rather easier.**

● **Here's the bonus game, where more tiles are being added with every pair you remove. First you feel overwhelmed, then hopeless, then despairing. Then you pour boiling Nescafé into your ST's keyboard and dive into the lavatory.**

● **Between mind-warping bouts of logic a scorechart – looking suitably, erm, oriental – pops up. It's also very scathing about your performance.**

SARAKON

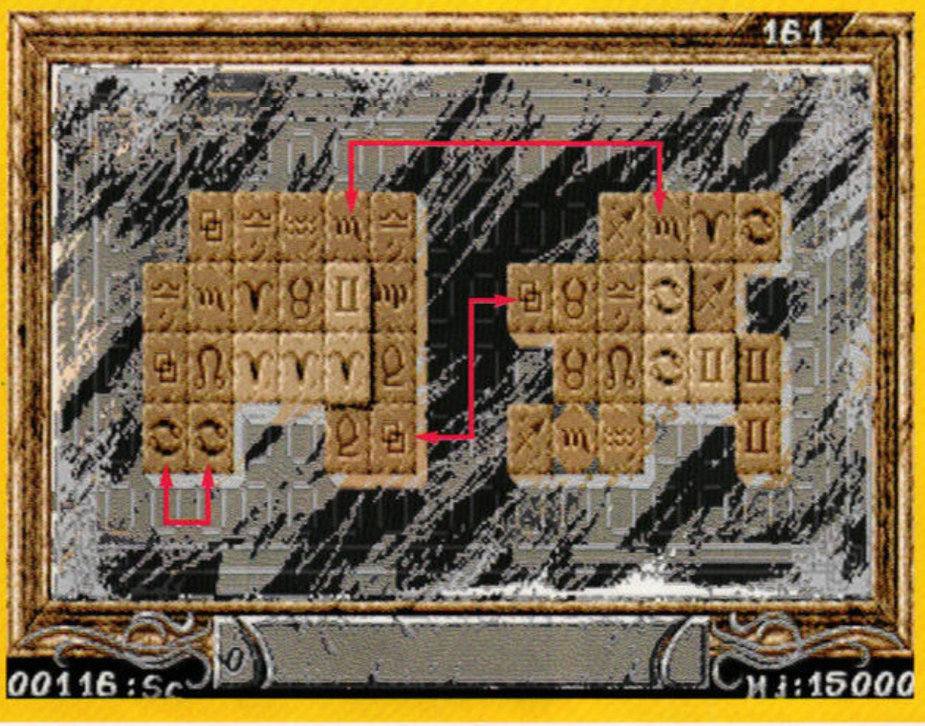
VIRGIN/LEISURE
GENIUS £24.99
Can run on single sided disks

- Continues the tradition of games like *Puzznic*, but the oriental atmosphere makes it seem classier.
- Slicker than the various PD versions of the game around; fast and funble-proof.
- Not quite another *Tetris*, but does deserve to become a minor classic.

STF RATING 74 %

ZEN AND THE ART OF SARAKON

● **There are two levels of tiles here as well as the two separate sets. You can link tiles up between the sets and as the timer ticks away in the corner it's possible to see several pairs which could be removed. Remember, links between pairs can have up to two right angles in them, and the further apart the tiles you link, the more points you get. Shown are a few of the links you could make for the next turn.**



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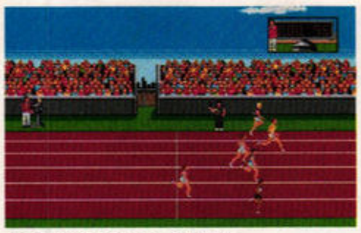

● Struggling in the sprint...

● Hopping over the hurdles...

● Long distance falling over...

● Walking in the air over plush carpet...

● Open-air competitive bedmaking...

● Making a pathetic hammer throw...

● Throwing spears at the crowd... All it takes is a lot of joystick-waggling!

INTERNATIONAL CHAMPIONSHIP ATHLETICS

● Ah, the grandeur and the glory of the Olympics! Ah, the passion and the poetry! Ah, the little wibbly stick-man lighting the flame of this dodgy sports sim!

As Olympic year approaches, the software companies are all set to start bringing out their own interpretations of the various Olympic events. First off the mark are Hawk with *International Championship Athletics*.

The game features 16 athletic events which are controlled in one of seven ways, most methods being based on a control panel combining energy, angle and direction.

Sprint Events: For these events you simply have to waggle the joystick as fast as possible, using the <Fire> button for the odd burst of energy.

Hurdles and steeplechase: These involve you running along a track pressing the <Fire> button to time the jumps correctly. To get over the hurdles, you also need to waggle the stick to keep up your speed.

Long distance: Running over distance requires a more strategic approach. Pushing forward on the joystick increases your speed, but the faster you run the more of your energy reserve it takes up. To succeed you must keep to the faster right-hand lane and judge the correct balance between speed and stamina.

Long jump and triple jump: These are basically the same, with you waggling the stick to build up speed and pressing the <Fire> button to start the jump angle rising. The power and angle are taken from the moment when you hit the jump board.

High jump and pole vault: Waggle the stick to build up power and press the button to start the angle sweep. If you fail to clear the bar you are out of the contest.

Discus, hammer and shot: These are the most complex of the events. You have to waggle the stick to increase power and press the <Fire> button when the angle and direction indicators are at the optimum value.

Javelin: Make your run-up by waggling the stick and press <Fire> to start the angle sweep. Let go once the desired angle has been reached and the javelin is thrown.

At the end of each event, the crowd show their opinion of your performance, cheering their approval or gasping in disappointment. The medals are then awarded and the commentator gives a report on the competition standings.

VERDICT: There are already plenty of sports sims available for the ST, so a new one either has to have marvellous gameplay and presentation or bring a completely new aspect to the genre. Unfortunately, *International Championship Athletics* is about as mediocre as they come.

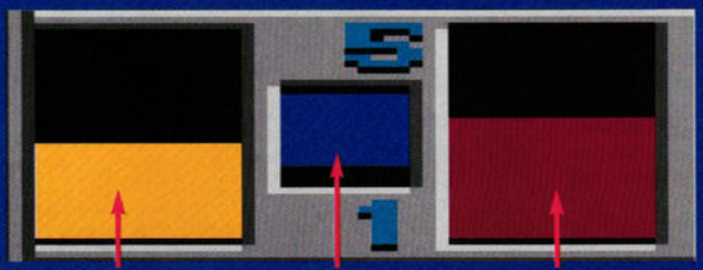
The graphics are pretty duff, with some very weedy sprites running across bland backdrops. The intermission screens aren't too hot either. The crowd scenes and commentator sequences are laughable, with all the characters looking like a *Spitting Image* puppet of ET.

The control method is rather novel, but it sometimes causes far too much confusion, especially on the throwing events, to enable you to actually play the game. Hunting around the bargain bins of your local ST software store will no doubt turn up an old sports sim at a low price, in which case you'd be well advised to plump for one of those rather than buying *International Championship Athletics*.

MAFF EVANS

THE SPORT OF WINNING

The control method for most events is based on this control panel.



Power. In most events, waggling the stick builds up power. On long-distance events, however, this signifies your stamina

Direction. For throwing events, it fills up when you're facing the right direction. Synchronise this with the angle bar for the ultimate throw

Angle. Try and get the angle line to stop in the middle. This gives a throw or jump of 45 degrees – the optimum angle for distance

INTERNATIONAL CHAMPIONSHIP ATHLETICS

HAWK £25.99

Can run on single sided disks

- Old-fashioned waggling similar to *Daley Thompson* makes the game seem very dated.
- The game features very little of the polished presentation found in the the Epyx Games series.
- If you want playability and a slick appearance you'd be better off with *Games Summer Edition*.

STF RATING 49 %

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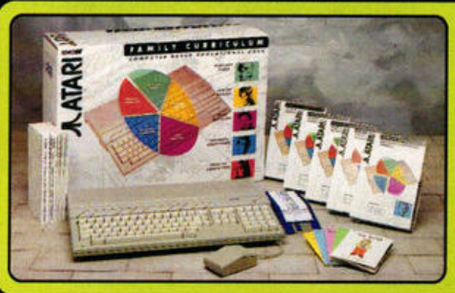

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PIT-FIGHTER

Can't see your careers officer recommending this as a profession – the hours are terrible, and every time you fall over, someone stamps on your head. *Pit-Fighter* is a vicious beat-'em-up with loads of dirty moves. Your opponents are ruthless and you need to be too. Anyone on the ground gets laid into, so forget all that Marquess of Queensberry stuff and put the boot in.

You choose between three lovely boys – Buzz, Ty and Kato. Each has his own brand of special moves – head butts, punches and a scissor kick which brings tears to the eyes. Your chap is fully joystick controlled: hit "Fire" and move the stick to fight. There are seven different opponents to maim before the final duel with the ultimate warrior.

Each opponent has his (or her!) own low-down dirty ways of fighting, so you need to adjust your tactics. What's more, someone has carelessly left weapons scattered about to increase the mayhem factor – knives, throwing stars, crates and motorbikes. Motorbikes? No, you don't run over your opponent – you pick 'em up and throw 'em.

Little bars at the top of the screen show your health. When this reaches zero, you don't get up again. You get three lives before having to start over again. At the end of each bash, you collect your prize money plus an extra brutality bonus – so viciousness pays!

The game really comes to life when two players take part. You get two baddies to deal with and you can even duff each other up.

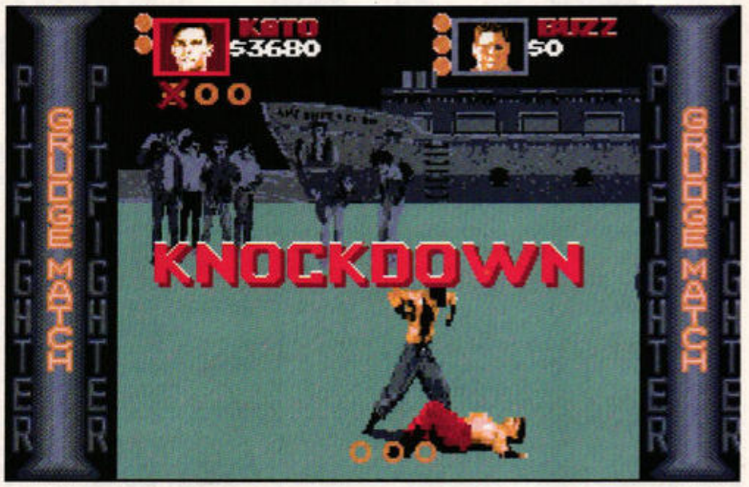
As in the original coin-op, the sprites have all been digitised and there is a clever scaling routine that shrinks them as they move further away from the "camera." They look rather blocky at close range, however, but the graphics are quite acceptable – until the characters start moving. There are loads of complex throws and kicks all done in two or three frames, so everything looks very jerky. One second your chap is standing still, the next doing a flying kick. Especially in conditions like these, landing a blow with one of the more impressive moves is quite satisfying. But unfortunately, there are no sound effects, just chip music played throughout the whole thing.

VERDICT: The scenario is extremely tacky. No noble cause, no damsel in distress to rescue, just clobbering people for money with a bonus for being especially nasty.

If you can live with that, you find that the main trouble with *Pit-Fighter* is its unresponsive controls. Large parts of the game are spent madly waggling the joystick around, desperately trying to get your chap to do all these fancy moves while the other bloke is bashing you in the head.

The novelty of the sheer roughness of the fighting and the fancy sprites wears off after a while, and you're left with an average beat-'em-up that is only real fun with two players.

CHRIS LLOYD



● **In this manic beat-'em-up, every third match is a grudge match – one-on-one, first to three knockdowns wins. Er, afraid that's you on the floor.**

● **Tonight Rodney shows off the latest look. Note the fashionable figure-hugging chains with matching bin-liner mask.**

● **Get too close to the jeering crowd and some disgruntled fan knifes you! Must have got him in – er, a rather delicate spot, too, judging by the way he's jumping up and down.**

● **The old smelly foot in the face trick should keep him at bay. Each fighter is capable of many different moves made with the usual frantic waggling of the joystick.**

PIT-FIGHTER

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- Smaller sprites than those in *Golden Axe*, but the digitised graphics and 3D scaling give this a unique look – and the sprites are still bigger and better animated than those in *Shinobi*
- Not quite as much blood as *Barbarian*, but still the most vicious beat-'em-up in the world, probably
- Fewer moves than *IK+* karate, and just not responsive or playable enough to give that game much of a run for its money

STF RATING 65 %

● ***Pit-Fighter* is loads more fun with two players. Here in a typical scene, you're being done over by two thugs while your mate waves an oildrum around laughing at you. Thanks a heap!**

● **Her name is Angel but she certainly isn't. Here she is kicking you repeatedly in the head in a singularly unfriendly manner. "Look Angel, I only asked if you fancied a drink, for goodness' sake!"**

● **That's better – you've managed to pick her up at last. Take her home to meet Mum and the family for Sunday lunch? Ha, no chance! Throw her around the ring, more like – far more entertaining.**

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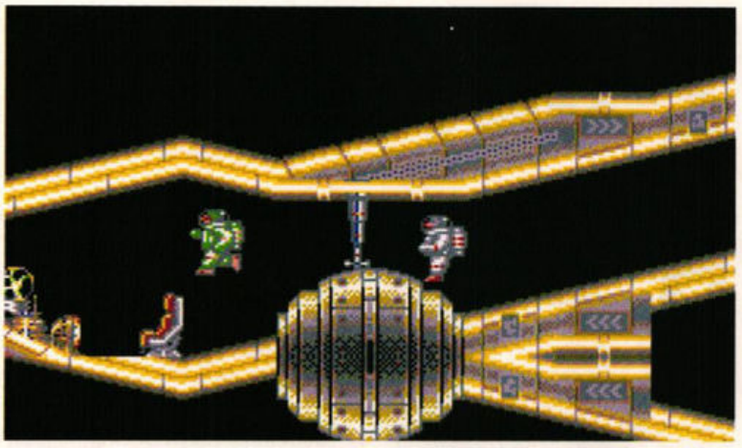
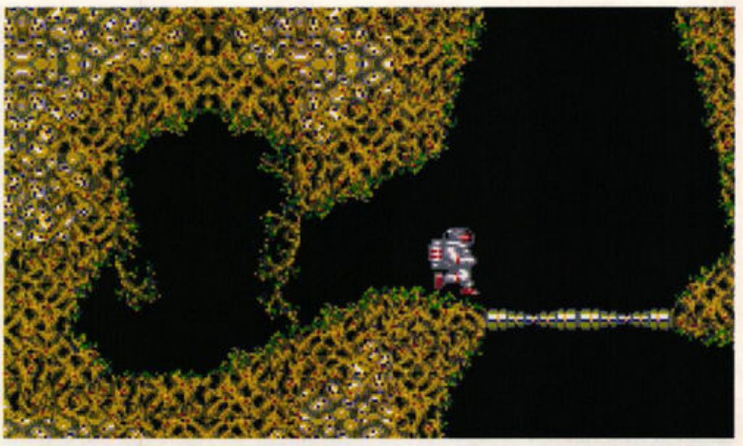
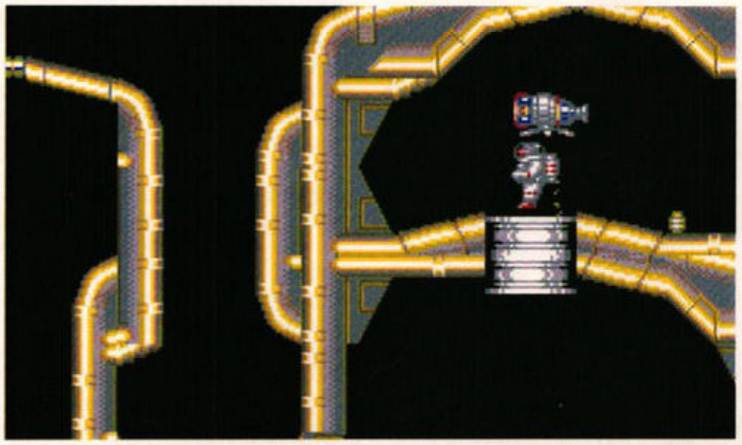


● Right at the start of this horizontally-scrolling platform game, the villain Triax himself teleports in and steals your ship's Destinator, without which you'll never be able to escape, far less rescue your chums. Get after him, quick!



● The game's first tricky problem. Get past the big gun at the tunnel entrance and you're blocked by a steel door. Dropping a grenade will blow it open, but the blast will kill you (in as much as you can be killed). A little deviousness is called for.



● Now here's an interesting dilemma – the heavy cannon is an extremely useful weapon, but it's *so* heavy you can't actually move it far enough to get into the room. Tip – a little birdie can help you out here.

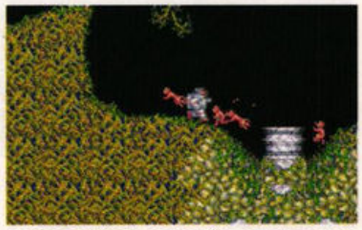
● Watching the wildlife, *Exile*-style. While the bird (a harmless green specimen) is pretty easily spotted, would you believe that the robot-like creature is actually a lemming? Clearly, Triax's experiments are producing some, er, *unusual* results.

EXILE

You'd think they'd learn. On capturing Triax, a psycopathic genetic engineer who used to tamper with the brains and bodies of his victims and turn them into mindless "terminators," the Earth authorities put him on trial. On finding him guilty of a series of heinous crimes, though, the bungling fools completely fail to do the universe a favour and shoot the mad old bugger, choosing instead to fire him out into space to drift around helplessly for the rest of his life. (Clearly no-one in authority at the time has ever seen *Superman 2.)*

Anyway, predictably enough, Triax escapes and sets himself up on a small out-of-the-way planet, where he continues in his unpleasant ways until he is disturbed by a colonisation force. The force soon discover that he hasn't lost his touch with genes – they are swiftly wiped out by a host of grisly mutants, but luckily not before they manage to get off a distress message. Answering the call, you set off for the planet Pheobus, your mission being to rescue any living colonists and give Triax what he should have had in the first place – a bullet in the head.

Exile is an arcade adventure in the original sense of the term. Your character is controlled by joystick (or a mix of joystick and keys if you prefer), but progress through the game is much less a matter of alien-zapping and much more reliant on solving tricky and perplexing problems. You can't be killed as such (you carry a personal teleporter which whisks you back to the safety of your ship if you get into dire trouble), but there is a time limit, and you don't want to have to spend too much time retracing your steps through the game's enormous caverns, so extreme care is advised. And basically it's as simple as that. Except, of course, it isn't...



● These little imps (or "rascals," as you frequently call them while playing) have an incredibly irritating habit of knocking you around, but if you can grit your teeth and be nice to them, you might find it a rewarding ploy...

VERDICT: *Exile* is one of the most taxing games you're ever likely to play. The arcade aspect is challenging enough, but the puzzles are so devious that you spend as much time sitting around and wracking your mind as you do flying around and doing things. Yet they're always, tantalisingly, just within the reach of logic – when you finally solve one you go, "But that was so obvious!"

There are a whole slew of keys and icons to remember, but if you do as you're told and follow the manual for the first game or two, they become second nature, to the extent that you don't have to consciously think about them at all. You also then find yourself using a control system so flexible and useful that you wonder how you ever put up with anything less. The puzzles are so tough that the sense of triumph you get from completing one is enough to see you through the next three hours of struggling without complaint, and the alien mutants so alive with character that you whoop with joy every time you manage to mangle one of the little horrors.

Play *Exile* for hours and you only scratch the surface, but you always make enough progress to want to carry on and get just a little bit further. Buy this game and you may not want another until next Christmas.

STUART CAMPBELL

EXILE

AUDIOGENIC £25.99

Can run on single sided disks

- Graphics are smaller than those in *Turrican 2*, but they do their job adequately
- The best blend of depth and playability all year
- Like *Baal*, incredibly tough, but incredibly rewarding when you do get something right
- A masterpiece – there's no other word for it

STF RATING 92 %

www.stformat.com

IT'S A CRUEL WAR

A quick tour around level one of this blast-'em-up and you soon want to give up and go home. Trouble is, home is light-years away!

● A quick beam-blast soon sends these aliens packing. But their shots survive after the aliens' death and track your ship around the screen.

● Power-up-bearing aliens leave icons behind when they toddle off to meet their maker. This particular nugget provides your craft with a droid wing-man.

● And here's the little fellow himself, battling the baddies at your side. Press the Spacebar and off he goes – attacking aliens to the front or the rear. Hit the Spacebar again and back he comes and acts as a shield protecting your ship.

● Deeper into the alien landcape and things are hotting up. Power-ups aren't reincarnated with you when you lose a life, so self-protection is preferable to high-score attempts.

● At last, a knight in shining armour comes to your rescue in the form of a power-up. These missiles split in three directions – funnily enough, so do the aliens when hit by them. Us 1, Aliens 0. But there's still a long, long way to go!

● Like the teeth of some huge mechanical monster, these metal molars crunch up and down on our unsuspecting ship. Why oh why can't the Earth's leaders just send in the B52s?

Z-OUT

Aliens never learn, do they? But then, if humans unfortunate enough to grow up in close proximity to Spaghetti Junction are expected to develop learning difficulties, it's no surprise that our spaced-out adversaries should suffer the same, considering how much flak they receive from us Earth-bound joystick-wielders. Still, the aliens of Alpha Centauri are back – out to avenge the beating they took in the battle of *X-Out*.

So do the Earth's defence leaders have a cunning plot to counter the dastardly threat? Nope – in their wisdom they decide that a one-man solo flight into the heart of their defences is the best means of attack. Ludicrous, short-sighted and unrealistic. But let's face it, we wouldn't want it any other way.

Shoot-'em-ups don't come more straightforward than this – but that's not necessarily a bad thing. If something's not broke, why fix it? So Rainbow Arts present *Z-Out*, an annihilate-'em-up stereotypical of the genre that has proved to be so popular. First, it's tough. Six levels of probably the hardest horizontally-scrolling alien-infested landscape you'll ever see await the attention of you and your trusty ship. And as per the formula, before too long power-ups can transform your humble "popular plus" model ship into the XR3i of the spaceways. But that doesn't mean it gets any easier.

There are seven different weapon systems to collect, but your ship isn't entirely defenceless on its own. As well as using the standard forward-firing laser, you can hold down the "Fire" button for a couple of seconds and a bleep informs you that a devastating energy blast is ready to be released upon the lifting of your trigger finger. Keeping the (irreversibly-becoming-less-significant-but-I'll-soldier-on-regardless) car analogy, there are also a couple of "optional extras" for your craft that can be collected en route. Think of the drone that restores energy when coupled to your craft, or when released adds a firing wing-man to your ship, as a caravan. A "roof-rack" feature is provided in the form of satellites, which one-by-one surround your craft, giving you an impenetrable shield.

And so the baddies keep swarming their fiendish patterns over progressively different backdrops, but the action remains the same. It's a tough, sizeable challenge that requires tactics – but mainly because every new life starts you back at a "mile-post," so there's no crashing straight through the levels. Two-player simultaneous action provides an extra dimension to the otherwise repetitive gameplay, enabling you and your buddy to take on the alien hordes together.

VERDICT: *Z-Out's* graphics are okay – nothing spectacular but nothing dreadful – with the colourful backgrounds scrolling very smoothly in four directions. At times sprite collision detection is suspect, and your ship could do with moving quicker. But on the whole, visually *Z-Out* does the job all right. Sound consists of the usual blips and crashes, with a rousing up-tempo number accompanying the opening credits.

Here we have a bog-standard shoot-'em-up, but if you know what you like then there's no problem in that. The game design bears a remarkable resemblance to *R-Type*, and so can be relied upon to offer an entertaining challenge, even if *Z-Out* won't win any awards for originality.

The two-player mode is a worthwhile addition, but *Z-Out* remains purely for the shoot-'em-up addicts who are likely to apppreciate the tough difficulty tuning. Actually, tough is an understatement – it's bloody difficult.

Will aliens ever learn? Who knows, but these ones seem to be getting the hang of it.

NEIL WEST

● This is more like it! Two-player simultaneous action not only gives the extra-terrestrial fiends something to think about, but adds considerably to the long-term enjoyment potential of this four-way-scrolling blast-'em-up. Apart from this entertaining option, *Z-Out* is likely to appeal only to the hard-bitten purists.

Z-OUT

RAINBOW ARTS £24.99

- Bears a striking resemblance to *R-Type* – but this has smaller graphics, much poorer sound and none of the excitement
- Much tougher than *R-Type* – great for the shoot-'em-up junkie, but first time blasters could find themselves a much better introduction to the genre
- Even harder than *Turrican* – which means tough!
- Where *Frenetic* was full of unexpected little touches, this has nothing original whatsoever

STF RATING 53 %

www.stformat.com

REALMS

There can only be one ...
Just make sure it's yours.

Love Thy Neighbour?
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For the first time, you can take complete control of your own destiny as you attempt to dominate an entire world.

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~Six distinct humanoid races

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● Someday, all helicopters will be made this way. (And it's going to be a bit difficult to tell one from the other when they are.) The *Thunderhawk AH-73M* is the latest, greatest and most altogether fictional chopper, and it wipes the floor with the opposition.

● The external view may be altered to suit your taste, by zooming and rotating it until you get the best angle. Things are more impressive from this angle but it's inadvisable to try to fly the Thunderhawk from it, unless you're a real idiot – sorry, a real crack shot.

● If you complete a stage successfully you're congratulated by your commander. A nice touch is that these messages change depending on your performance. Unfortunately, he seems a bit do-lally at the moment – proof that a severe haircut isn't hard or clever at all.

THUNDERHAWK AH-73M

Forget your SuperFulcrums, forget your Stealth Fighters, because planes are passé. Choppers are where it's at (and no sniggering). Particularly the all-new Thundersparrow – sorry, Thunderhawk. Ed Ricketts goes all wobbly at the thought of it

● A morale boost from the Pres before you tackle one of six challenging missions...

The United States is famous for its "peace keeping" forces stationed in various places throughout the world. Whether or not they keep the peace they pack some serious firepower, but nothing as devastating as the *Thunderhawk AH-73M*.

The Thunderhawk is a fictional helicopter that incorporates state-of-the-art weapons systems, an impressive turn of speed, simplified control methods and a seriously nice paint-job in one multi-role mean mother of a gunship.

As a member of the (also fictitious) crack assault team MERLIN you control one of these beasties. Your job is to visit various troublespots around the globe and defuse potentially troublesome situations before they escalate into world-scale conflicts. This is achieved mainly by blowing the perpetrators off the face of the map.

Each of the six missions you can tackle is split into many smaller sections. In South America, for instance, you might first take out the enemy's communications points, before destroying their defensive weaponry and finally their laboratories. The Thunderhawk can outperform any chopper the opposition can throw at you, but you still need to be good to tackle the harder missions. Although some of your weapons are self-guided, many have to be aimed manually and you find you're trying to fly straight, aim a missile and dodge an attacking Hokum all at the same time.

The world, as you see it, is displayed in solid 3D. Mountains are simple pyramids, but all other features have a modicum of detail, though the landscapes do often look quite sparse. Buildings, trucks, bridges and other choppers all look extremely realistic.

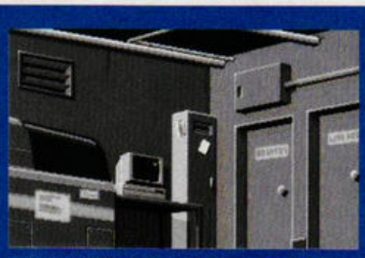
The best thing about the 3D is the smoothness with which it moves. There probably isn't another flight sim on the market whose graphics are as smooth as those in *Thunderhawk*. Zooming in and out on the external view is just like watching a real camera. Fortunately, detail hasn't suffered – every object has a shadow, smoke belches from wrecked vehicles, flak streaks by your windshield at night and ships actually sink when you hit them.

This smoothness makes handling the Thunderhawk a dream. The whole

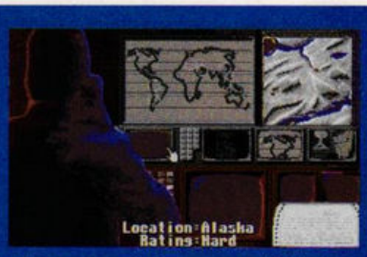
NICE DAY IN THE COCKPIT, DEAR?

It's a grind being a crack gunship pilot. Days of secret ultra-important "peace keeping" missions in red-hot troublespots throughout the world can take their toll. And you never know what to wear – one day you're in the desert, and the next, in the tundra of Alaska. Ah me.

● Before you can do anything else you have to sign on the dotted line. This is so you can be identified when you're shot down in flames, or in the unlikely event that you make it home with more than two limbs. Each game begins with you as a 1st Lieutenant, though promotion is possible.



● The Common room is the base for everything you do. You can access the simulator (next to the computer) to practise flying with unlimited weapons and indestructibility; the computer, to load and save games; the Filing Cabinet, to see any promotions you may have; the War Room to choose a troublespot; and the Briefing room to get info on the next part of your mission.



● For a new mission you should first visit the War Room. Here the six troublespots are displayed. Clicking on one of them shows you its location and its difficulty rating. It's probably best to start in South America (easy) and leave Alaska until last, 'cos it's the hardest.

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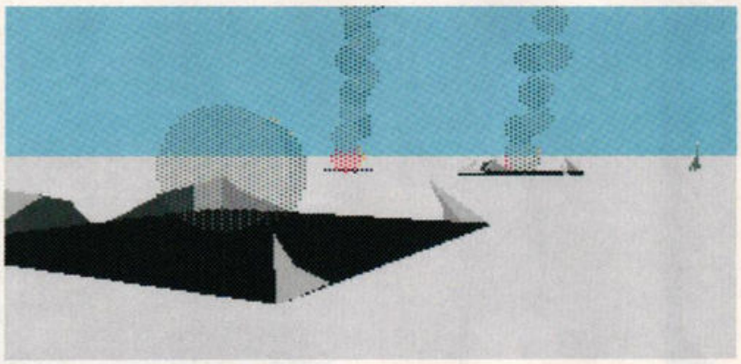


● You can change the display to that of any weapon. This is often the best place to get the really spectacular views. Here a missile has just slammed into the structure in the foreground. The smoking buildings behind have also had the same treatment.

chopper can be controlled solely by the mouse, though the keyboard is used for some peripheral controls.

Controlling a chopper is different to flying a plane – when you push forward with the mouse on most flight sims, you would expect to tilt downwards. However, in *Thunderhawk*, doing the same thing speeds you up.

Another outstanding point graphically is the intro sequence, which features some top-class traditional Japanese-style cartoon animation combined with digitised backgrounds and speech. The intro takes up a disk on its own and is possibly the finest example yet of this ever-growing breed.

Surprisingly, sound is above average. There's a satisfying rattle as you fire off another round of gunfire and an almost convincing engine noise. Other spot effects create just the right air of panic when you're caught in a crossfire.

VERDICT: *Thunderhawk* is definitely the best helicopter sim on the ST. It manages to combine realism, excitement and ease of control in one large package which you just can't help liking. Six missions may not sound very many, but each mission has at least six separate parts and you won't find any of them too easy.

The fantastic smoothness of the graphics is a bonus. And this doesn't mean the non-action screens have been neglected. Each and every graphic is excellently drawn and really gives the impression that time has been spent on the game.

If you're a beginner, you might wonder why you were scared of flight sims once you pick off your first target. If you're a vet, crank the difficulty level up to max, climb aboard with just a gun and one missile and raise hell with the enemy. Either way, you're gonna have a hell of a lot of fun.

ED RICKETTS

THUNDERHAWK AH-73M

Core Design £30.99

1MByte recommended
Double-sided drives only

- Beats the only other chopper sim available, *Gunship*, into a bloody pulp
- Controls are much simpler than virtually any other flight sim
- Graphics smoother than *F-15 Strike Eagle 2* or *F-19 Stealth Fighter*
- Fewer missions than *F-15* but they're more interesting

STF RATING 91 %

SO JUST WHAT DOES THAT LITTLE BLIP THERE MEAN?

The Thunderhawk is less difficult to control than a real chopper would be, thanks to the simplified HUD and its single joystick which acts as both the collective and cyclic joystick. (Confused? So are we.)

Collective – shows the amount of power being fed to the main rotor. If the bar is on the centre mark, there's just enough power for level flight; below it, there's too little; above it, more than enough

Heading indicator – the arrow above it shows the course to follow for your next target, and the vertical line shows the course to take to reach your base

Airspeed – horizontal speed, in knots

Vertical Speed Indicator – indicates if you're ascending or descending

Altimeter

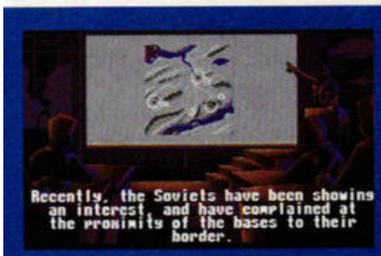
Radar – has a range of 4km

Remaming weapons display/damage report computer

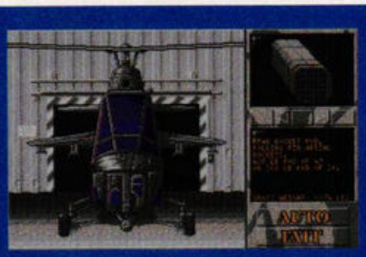
Cyclic joystick – moving the mouse moves the small box inside the larger box. If the small box is inside the centre box, you hover; any other position, the helicopter moves in that direction

Countermeasures – indicates whether your radar and infra-red jammer is on or off, and if any radar/IR guided weapons have been launched at you. The bottom two numbers are your remaining chaff and flares

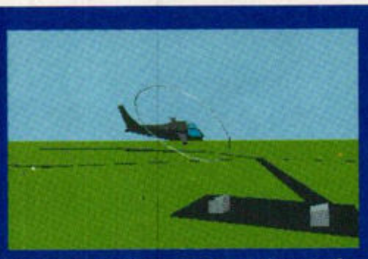
Multi-mode camera – in Targeting mode, shows your currently selected target and the range. In Landing mode, simply shows the area beneath your chopper



● Next stop is the Briefing room. Each main mission is split into several stages, and upon successful completion of a stage you visit this room to be briefed on the details for the next stage. These details include your targets, the way you should approach them and any known defensive weaponry you can expect to encounter.



● When you're genned up, you arm your Thunderhawk with appropriate ordnance for this stage. You can load up with three sorts of bombs, eight flavours of rockets and missiles, a radar jamming pod and a runway cratering system. Clicking Auto automatically loads a suitable selection of weapons for this stage if you can't be bothered to do it.



● Finally it's time to get out there and kick ass! Show them what made America great! Take no prisoners and leave no building undestroyed! A gathering stone rolls no moss! In the frenzy of war, there's no time to hesitate – put your best AGM-65P forward and...

Get blown up. Still, never mind. You tried your best. Unfortunately it wasn't good enough and your name will go down in history as that pathetic wretch who couldn't even go a couple of miles without getting his pylons shot off.

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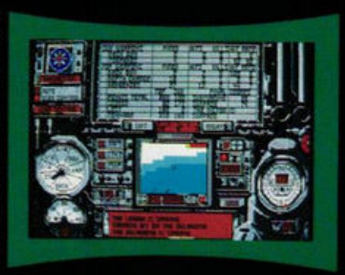

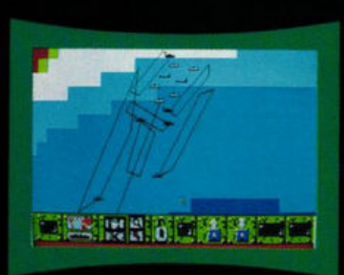

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● Yet another shoot-'em-up storms, or rather crawls, onto the ST. One glance at the screenshot and you know exactly what comes next in *Zone Warriors*.

ZONE WARRIORS

Those aliens, eh? They'll try anything. After countless sound drubbings at the hands of video game players everywhere, the evil extraterrestrial swine have abandoned the usual straightforward approach and started to get just a little bit sneaky.

Using a time machine (oh no!) stolen from an Earth space station, they've "infiltrated the past in the hope of destroying human history." In the usual bizarre plot hitch, for some reason Earth can't send half a million heavily-armed tanks after them and have to rely on one man with a rifle. Ho bloody hum. Guess who the mug is, yet again? Yep, it's you.

Your objective is to "mend the ruptured fabric of time," which, in this case, entails wandering around a maze of platforms shooting aliens, rescuing hostages, collecting keys, battling against big end-of-level meanies, and drinking lots of coffee in a vain attempt to stay awake. *Zone Warriors* features a 3D maze on a 2D screen, which means lots of confusing "into-the-screen" doorways and heavy reliance on a compass.

Getting your bearings isn't helped any by the fact that all the screens look exactly the same, which isn't surprising when you realise that they're all made up of a very small number of blocks, which are thrown haphazardly together to provide some kind of rudimentary attempt at distinctive levels.

● Well, at least if you're into S-'n'-M the game's not a *total* loss...

Occasionally, while you're traipsing around, you find a captive you can rescue, or a power-up of some frighteningly imaginative description such as three-way or five-way fire, or even a speedup if you're really lucky – and that, as they say, is about it.

If, by some miracle, you manage to maintain interest beyond the first 20 minutes, you may well stumble across one of the big boss baddies – once you've collected the key to the room he's hiding in.

If you kill him, you get to travel on through time to the next level, where you get to do it all, all over again. Then again, you may not. You're unlikely to care either way.

● Does this look a trifle dull to you? It's the same old stuff all over again.

VERDICT: *Zone Warrior's* only chance of concealing the astoundingly tedious, repetitive, pointless and unrewarding gameplay found here would be to eclipse it with staggering technical effects, but the graphics and sound are so unremittingly mediocre that there's no chance of that whatsoever.

The programmers have made a half-hearted attempt at ripping off *Turrican*, but even that rather characterless blaster had more life to it than this. Playing the game with one hand while reading a newspaper and eating our lunch we still couldn't get killed for over 30 minutes in the first game, and only managed it then because the phone rang. In the intervening time, we'd run around some featureless junglescape, shot some aliens, run around some featureless junglescape, shot some aliens, run around some featureless – well, you get the idea. Nothing quite this lame has been released for a very long time.

STUART CAMPBELL

ZONE WARRIORS

ELECTRONIC ARTS
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- Dull, terminally unimaginative graphics in a very small playing area
- Gameplay gets hopelessly tedious within two minutes (that's not an exaggeration, either)
- Only the most bloody-minded will ever bother to reach level two... and it isn't worth the effort

STF RATING 39 %

WARRIOR IN A WASTELAND *(cue long yawn)*

Presenting, as part of the famous *FORMAT* service, a quick run-through of the most interesting things you're likely to encounter in *Zone Warrior*.

● The loading picture is about as exciting as it gets.

● The intro sequence isn't exactly going to blow your mind.

● Venture onto the control room screen if you're after a real thrill.

● Programming on the cutting edge – oh, wrong game. The copy protection

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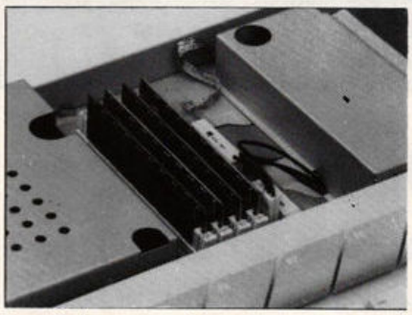

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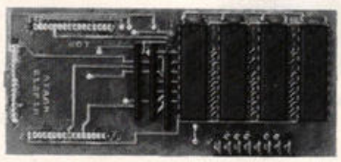

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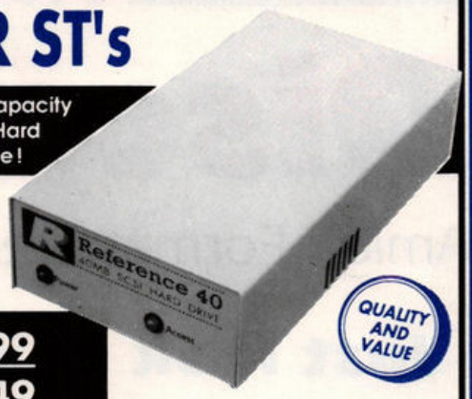

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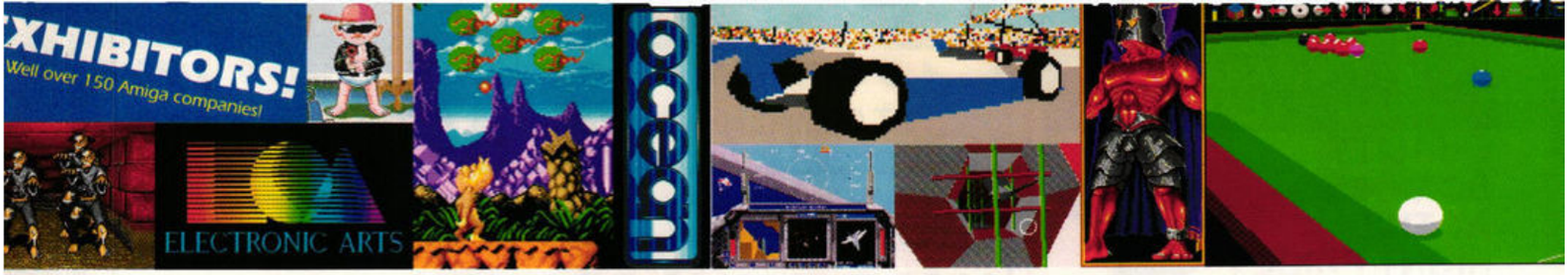

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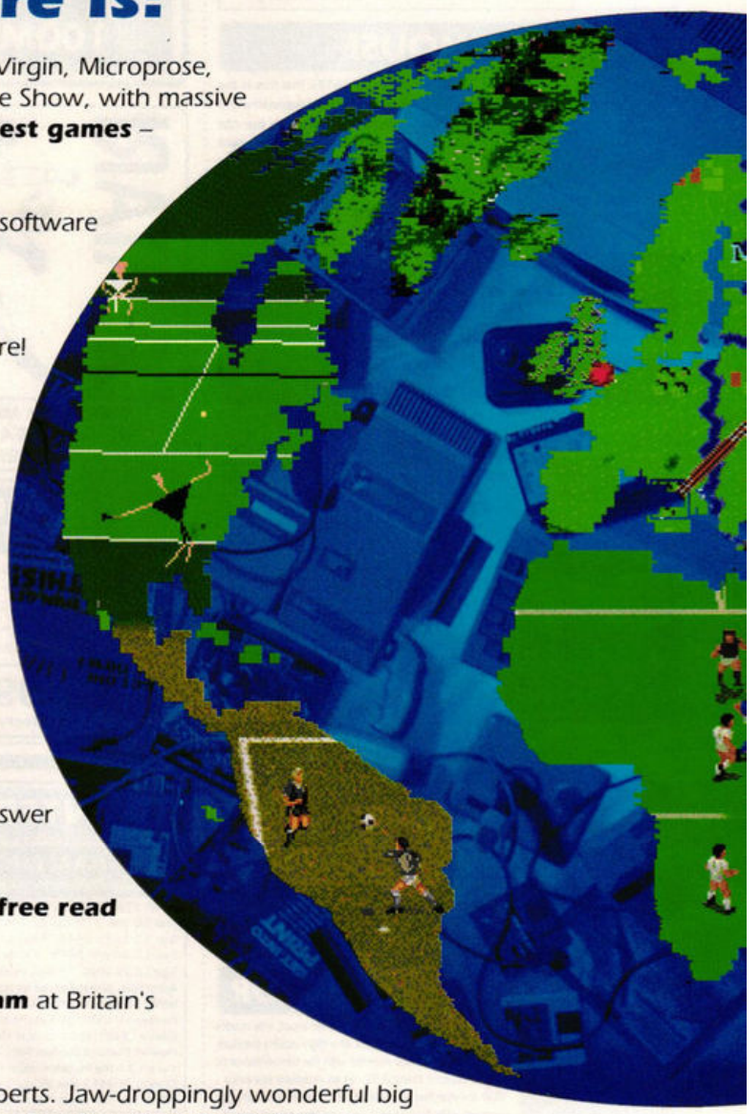

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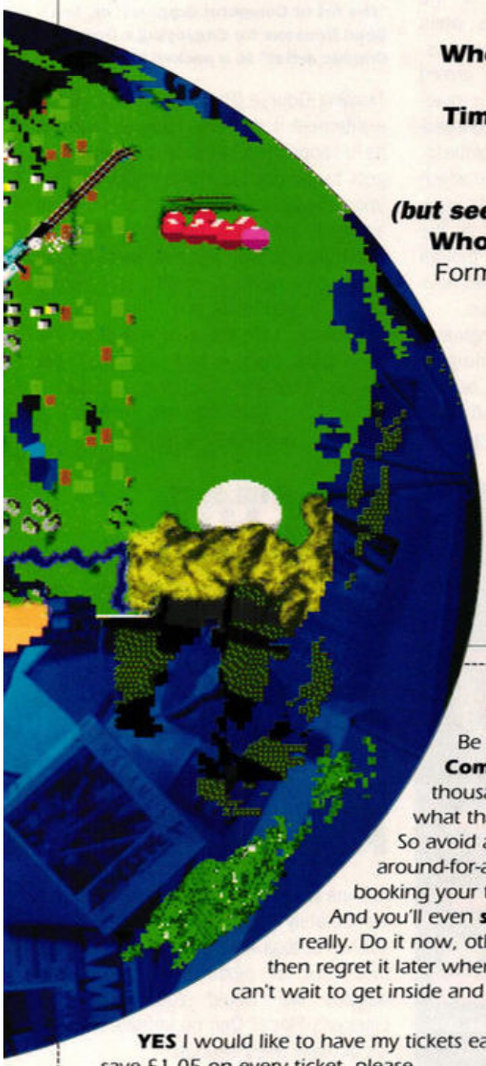

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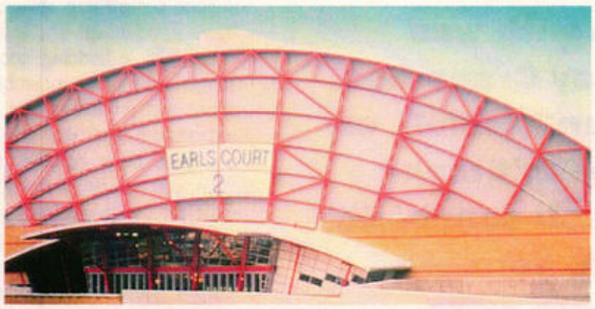

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STF11

SCREENPLAY EXTRA

This bit was going to be full of anagrams of "Screenplay Extra," but all we could come up with was "Lay Crepe Sex Tarn," which, er, doesn't make much sense. So, um, here are some more reviews instead

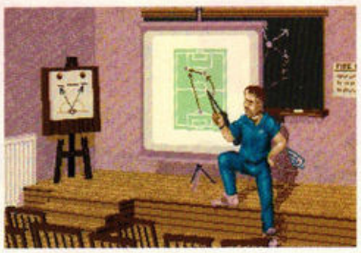
EUROPEAN SUPERLEAGUE

From a completely personal point of view, being a football manager must be the dullest, most unrewarding and downright tedious job anyone could ever take. Nevertheless, this is *European Superleague's* central idea, so someone somewhere obviously thought it was a good move.

You play a budding soccer team's manager with all the incumbent responsibilities and pressures, not to mention the boredom and the silly hairstyles. From your desk on the main office screen, you can do all the boring managerial-type things you're supposed to. You have access to a phone or your secretary, to call the press, a team scout or other useful bods; you can read through the team's files to see which players are doing what and why; you can mark appointments and meetings in your diary, set tactics for upcoming matches and generally do a pretty convincing imitation of a businessman. There are more enjoyable things on hand though – having a quick snifter from the whisky bottle on your desk, staring out the window and daydreaming, switching the light on and off (ahem), or simply going home.

There are some other screens, such as the Tactics display with its incredibly badly drawn Coach or the fake newspaper which appears when you make a comment to the press. Unfortunately the photo of the crowd that appears on this newspaper is overlaid on the headline, making it unreadable and therefore totally pointless. Oops. Frankly though, for a game which relies so heavily on graphics as its interface, they could be better, to say the least – many screens looks as though they've been knocked up in half an hour by a programmer past his deadline.

These graphics could be forgiven if the game was a whirlwind of intrigue, big business and double dealing, but it's not. It could easily be renamed John Harvey Jones' Industrial Management Training Course (Parts 1-22B) for all the excitement it delivers. Football fans will be disappointed because the nearest it gets to the pitch is at the match reports (more badly-drawn graphics), and management sim buffs (all three of them) won't want to play because there's nothing to do – at least, nothing you'd enjoy doing. If you think the game sounds interesting, save the £25 and get a job as a bank clerk – that way you'll get paid for indulging your paperclip fetish.



● **Mr Superleague ("European" to his friends) presents his world-famous talk "The Art of Computer Graphics; or, Ten Good Reasons for Employing a Decent Graphic Artist" to a packed house.**

CDS £24.99
***STF* RATING: 66%**

MONSTER BUSINESS

It's no wonder certain areas of the media view computer games with disdain when you get rubbish like this written on the back of boxes: "The city of Tin Town is in danger! The mad meanies from the big forest have once again broken loose, and are searching for little items they can steal, completely spoiling Mr Bob's construction site." You'd almost expect a rider of "Age range 2-5 years."

Never mind. Apply the old rule – forget the wibble and play the game. Each level is one screen wide and two to three high and full of girders, walkways and platforms. Running about are the aforementioned "mad meanies" – ducks, spitting monsters and rabid apes – who nick bits of hardware that are lying around. Armed with a bicycle pump, you dispose of these greeblies by waiting until they're right in front of you and then filling them full of air – pumping them up until they float harmlessly away. You can earn extra points by giving them a shove as they drift off, causing them to drop bonus objects and destroy any other monsters they touch.

● **Implausible Caption No. 4,390: The duck monster (a fearsome foe) mistakes a medium-sized beachball for a rather large gobstopper and, much mouth contorting later, this is the sad result. There's no business like *Monster Business*.**

Complicated, isn't it? Apart from a time limit on each level and the obvious fact that one touch from a monster sends you off to Heaven on little wings, that's it. The graphics are competent and comical enough and the constantly-playing tunes are slightly less annoying than usual.

Sometimes simple ideas make the best games, but in this case the idea is just too simple. The only feature that distinguishes this from a thousand other games is that you pump up the monsters rather than shooting them, and while inflation is fun for a while the novelty soon wears off. (Just ask John Major.) Admittedly there are 45 levels and no one is likely to get through those for a while, but that's less likely to be lack of practice than a bout of unconsciousness. Fun for a while.

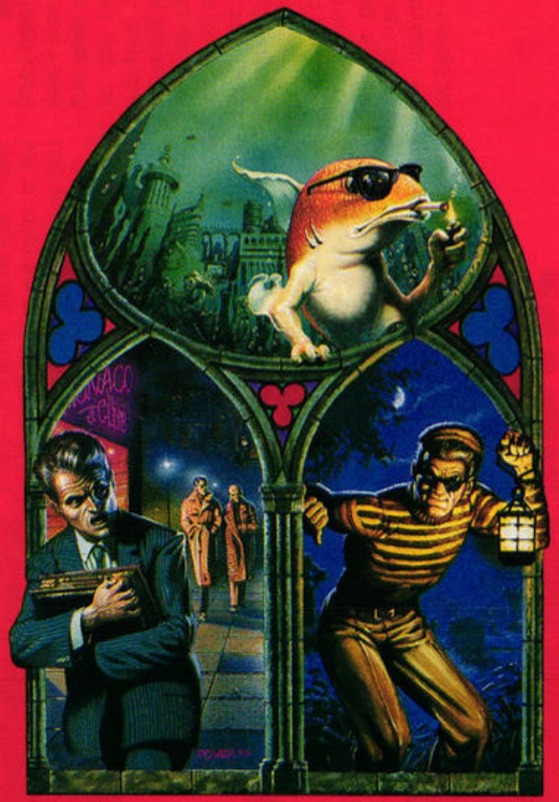
MPH £19.99
***STF* RATING: 72%**

DOCTOR FOX'S 1991 FOOTBALL ANNUAL

Anyone who's not interested in footy can immediately switch off. *Doctor Fox's 1991 Football Annual* isn't, as you may think, full of pictures of Gazza and quizzes like Could You Take Gary Lineker's Place? Ooh no indeed, missus. It's actually dead serious.

It's really a massive database specifically tailored for footy fans to enter all the results from matches by one or more teams over a season, and then make predictions based on their past performance. The proggie comes with all the results of matches played up to date of dispatch – all you have to do is log in each team's as they play matches from then on. The competitions covered are Barclay's League Divisions 1 to 4, GM Vauxhall Conference, Beazer Homes League Premier Division, HFS Loans League Premier Division, Diadora Football League Premier Divi-

www.stformat.com



THREE INTO ONE WILL GO!

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Three Magnetic Scrolls' hits in one package - now enhanced to run under WONDERLAND's Magnetic Windows game environment.

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IBM PC (VGA, MCGA, Tandy, EGA)	**£34.95**
Amiga (1 megabyte only)	**£29.99**
Atari ST (1 megabyte only)	**£29.99**

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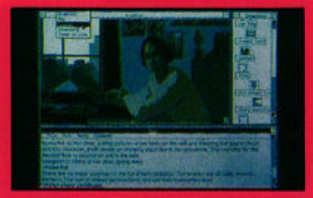


IBM PC VGA SCREEN SHOTS SHOWN

Virgin GAMES CONCEPTS IMMACULATE

Magnetic Scrolls

www.spectrum.com

GRANDSTAND

● Gazza (playing his Super Soccer) gets a little confused about who he is. His manager told him that he was the only one with the little arrow above his head, but then someone else turned up with a different coloured arrow and threw him off completely.

Ah, summer. I remember that. Sometime back in May, wasn't it? Domark's latest compilation features all those summery pursuits that always clog up the telly for hours on end in the sunny months – tennis, golf, motor racing and football. (Well, all right, football and motor racing don't – but, er, who'd be indoors watching telly all through the summer anyway?)

Motor racing is ably represented by *Continental Circus*, a no-frills racing proggie. Sat in your Williams Very Fast Car you've simply got to come in first place or thereabouts. The other cars are, as usual, bloody perfect, so you need to be damn good to win. Pit stops are essential when you bash another car or the scenery, 'cos otherwise you end up in flames with your car falling apart.

There are no fiddly controls (you only have two gears), the graphics are reasonable, though perhaps a little basic, and there's the sound to match. *Continental Circus* is dead simple and heaps of fun.

However, that isn't how you would describe *Gazza's Super Soccer*. Unlike *European Superleague*, this is a footy sim that concentrates on the action rather than the management.

And what action! Watching a small sprite wibbling around the screen in a vague response to your joystick movement, and occasionally attracting what must be a magnetic ball with his metal shoes. It must be very difficult running about with a football banging against your feet all the time. The Gazza sprite (assuming it is him, that is) certainly makes it look difficult anyway. Give this one a miss.

Surprisingly, *Pro Tennis Tour 2* did exceptionally well in the charts earlier this year despite its distinct lack of – well, anything at all really. *Pro Tennis* is a virtual clone. Unless you've played both games thoroughly you're not likely to notice any difference between them.

As a tennis simulator, it does its job well enough, and includes enough of a variety of shots to make it challenging – perhaps too challenging until you've put in some practice. The player sprites are well drawn and nicely animated and the

sion and the Scottish B&Q League (Premier, First and Second Divs).

The program can display a team's matches in chronological or opponent order, or a statistical analysis of its performance. You can run a search on a team to see when they're playing and a prediction formula entered to try to foresee results.

One of the best things about the program is that it doesn't take itself too seriously. For instance, in describing the workings of the prediction section, it tells you that "With careful use this can shorten your odds of winning the pools from 1,916,767,311 to 1 down to 4,292,145 to 1." Nevertheless, it's very comprehensive and at six quid it's hardly a major loss if you don't like it. Doctor Fox live (or should that be "lives"?) at 29 Turenne Close, East Hill, London SW18 1JN, ☎ 081 871 3420.

DOCTOR FOX £5.99
***STF* RATING: 72%**

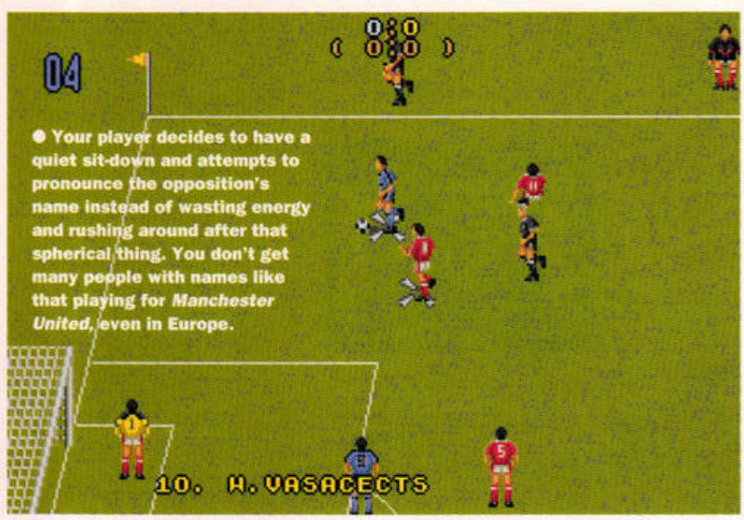
HOME CASINO POKER ETC.

Yes, it really has got *Etc.* in the title. Dubl Dubl Funware are an American company, as you might guess from the price. *Home Etc.* is a straightforward translation of Draw Poker, Stud Poker and Blackjack to the ST. The market isn't exactly swamped by such games (except maybe in the PD) so at least *Etc.* has little competition.

There's very little you can do with Poker and Blackjack, and that's just what's been done here. Each game is presented with clear, colourful card graphics and some effort has been made to make screens of text options look interesting. There are plenty of variations to the basic games to suit every kind of card player. So, if you want some decent well-presented card games on your ST, you haven't really got any choice but to go for this one. The only snag is the hassle of sending $35 to America to nab a copy. Dubl Dubl Funware's address is 4533 S. E. 85th Avenue, Portland, OR 97266, USA.

DUBL DUBL FUNWARE $34.95
***STF* RATING: 74%**

● One for you and three for me. No, look, it's perfectly fair – you drew second on the last hand with three tricks and two gonks spare, plus your loss of 15 triads and a couple of slights two hands ago. Dead simple.



● Your player decides to have a quiet sit-down and attempts to pronounce the opposition's name instead of wasting energy and rushing around after that spherical thing. You don't get many people with names like that playing for *Manchester United*, even in Europe.

MANCHESTER UNITED EUROPE

Well, Brian, at the end of the day, there are far too many football sims around. Inexplicably, this one is top of the charts (see page 13). At least this one actually lets you play football, unlike *European Superleague*. There are some managerial elements in it nevertheless. Before the match begins, you can decide which cup to play for, set your tactics, choose the players and whether they're human or ST controlled, alter the match length and of course the most important bit, change your manager's name. (The manager plays no further part in the game once you've done this – weird.)

Then it's onto the pitch. The first disappointing thing is the cheer of the crowd – a pathetic hissing that sounds like a weak kettle. Then there's the way the players move – very jerkily and with the minimum number of animation frames. The rest of the game, though, is quite bearable. Plenty of tricksy moves can be carried out: power headers, volley shots and sliding tackles, all with aftertouch. There's a ref and he's quite free with his yellow cards.

On the whole *MU Europe* comes across as an average game with nothing much to recommend it but nothing to criticise it for either. There are better and worse sims out there, and whether you buy this depends on your taste, your team allegiance and whether you have a penchant for altering team managers' names.

KRISALIS £25.99
***STF* RATING: 77%**

www.stformat.com

● Pit in! Pit in! Er – just what is "Pit in" supposed to mean? Mind you, you should expect anything from a game that got its title through a translation error. It ended up as *Continental Circus*, but it was supposed to be called *Yellow Suppositories...*

ball moves realistically, but the game just seems to lack charisma. As a result, you'll probably only keep at it if you're a serious Wimbledon junkie.

Up until the release of *Microprose Golf, World Class Leaderboard* was the best golf game available on the ST. It offered more realism and more variety than any of its competitors and was a fairly complete recreation of golf – down to giving you a choice of clubs, manageable but not too easy power/swing system, plenty of course variety and extras such as a two player mode. Its graphics are its only weak point: the trees look decidedly amateurish and the courses are a uniform green shade.

So *Grandstand* is an odd mixture of three goodish games and one terrible one. The lack of any one title that stands out is a little disappointing. The inclusion of *Kick Off* or *Stunt Car Racer* would have lifted the pack several notches in the respectability ratings. As it stands, asking someone to pay £30 for a collection of ropey has-beens and never-weres is a bit of a cheek.

DOMARK £29.99
***STF* Rating: 67%**

THE ADVENTURES OF MADDOG WILLIAMS IN THE DUNGEONS OF DURIDIAN

● Michael *"Maddog" Williams* ponders his goal in life, his future actions, his philosophy on the love/hate relationship between Conceptualism and Absolutism, but mostly he ponders why the hell there's a sundial on the table that's the same size as him.

Maddog Williams conforms to the Inverse Title Length Law which I've just made up: the longer the title, the worse the game. Written by an American games company called Gamecrafters, this is a poor man's *Secret of Monkey Island* – though since it's £25 you'd have to be quite a rich poor man.

The game is supposed to be a humorous graphic adventure in which you help Maddog as he attempts to save his village from evil, rescue the Princess and free her father. First point to note: if it's meant to be a graphic adventure the graphics really ought to be quite good. Somewhere along the line, this principle must have been abandoned because the graphics in *Maddog* are abysmal. Sure, they wouldn't look out of place on a 10 year old's screen, but this is supposed to be a professional game with professional displays. Everything is made of very simple shapes, with a few blotches of colour, and it looks as if the graphics have been done on a Spectrum. Animation isn't much better: Maddog walks like he has some serious personal problems.

Second point to note: nowadays, for any graphic adventure to compete with the likes of *Monkey Island*, it needs to be icon- and point-'n'-click based (or have a huge vocabulary), rather than rely on text input. Guess which method *Maddog* uses? It's the old problem of finding the right word or phrase – the game doesn't even understand "it". OPEN DRAWER is okay, but then try EXAMINE IT.

And point three: whose bright idea was it to include beat-'em-up sequences? Adventure players don't want to be distracted by these pointless exercises and arcade game lovers don't want to wade through the adventurey bits before reaching them.

You may think these shameless comparisons to *Monkey Island* are unfair, but that's the best adventure currently available on the ST and any other game has to at least match it. *Maddog Williams* doesn't even come close.

SMG £24.99
***STF* RATING: 66%**

FORMAT RATINGS REVIEWED

How did *FORMAT* rate the games reviewed over the last three months?

MICROPROSE GOLF	*STF* 27	●	95%
JIMMY WHITE'S WHIRLWIND SNOOKER	*STF* 27	●	94%
MEGA LO MANIA	*STF* 27	●	94%
RAILROAD TYCOON	page 62	●	93%
EXILE	page 75	●	92%
FLIGHT OF THE INTRUDER	*STF* 27	●	92%
HUNTER	*STF* 26	●	92%
MIDWINTER 2	*STF* 26	●	92%
ARMOUR-GEDDON	*STF* 26	●	91%
THUNDERHAWK	page 78	●	91%
F-15 STRIKE EAGLE 2	*STF* 26	●	90%
MAGIC POCKETS	*STF* 27	●	90%
Games Summer Edition	*STF* 26		88%
Switchblade 2	*STF* 26		81%
Maupiti Island	*STF* 26		79%
R-Type 2	*STF* 26		78%
Virtual Worlds	*STF* 27		78%
Manchester United Europe	page 89		77%
Boston Bomb Club	page 67		76%
RBI2	*STF* 27		76%
Atomino	*STF* 26		74%
Home Casino Poker etc	page 88		74%
Sarakon	page 81		74%
Supercars	*STF* 27		74%
The Ball Game	*STF* 26		73%
Creepy	*STF* 26		72%
Doctor Fox's 1991 Football Annual	page 86		72%
Life and Death	*STF* 26		72%
Monster Business	page 86		72%
Billiards 2 Simulator	*STF* 26		71%
Cloud Kingdoms	*STF* 27		68%
Impossamole	*STF* 26		68%
Wreckers	*STF* 27		68%
Footballer of the Year	*STF* 27		67%
Grandstand	page 88		67%
European Superleague	page 86		66%
Maddog Williams	page 89		66%
Pit-Fighter	page 73		65%
Famous Five on a Treasure Island	*STF* 26		61%
Z-Out	page 76		53%
Challenge Golf	*STF* 27		52%
Snott	*STF* 26		52%
Frenetic	*STF* 26		51%
International Championship Athletics	page 70		49%
Kid Gloves	*STF* 27		44%
Sharkey's Moll	*STF* 26		39%
Zone Warriors	page 81		39%

NOTE: Games in are reviewed in this issue

Gamebusters

And for your collection of silly words this month, there's this little pile of gems: stoop, screed, lacunar, gabfest, thong, plew, ferule, spinule, spigot (always a favourite, that one), gittern and, of course, snood. Coming next month: why "cockroach" isn't even remotely funny

● Our hero finds himself washed up on a beach with nothing but a table, a magazine (Ginseng and Water Bearer's Weekly) and 300 acres of Hawaiian leisure complex to entertain him. However will he survive?

CODENAME: ICEMAN

Sierra on-line

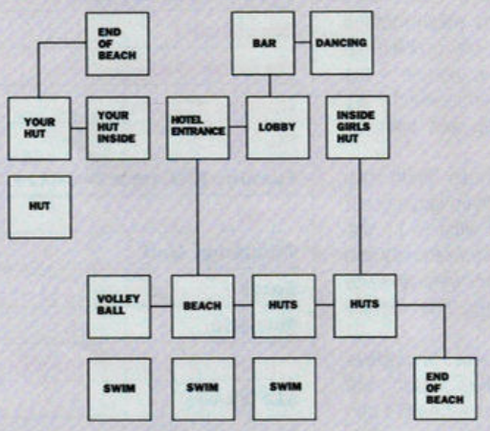
Another complete solution to a Sierra game, this time from Skolchevic Mendoza of Putney. The commands are listed as you should type them in, except for the comments in brackets, which are actions.

Look table. Get magazine. Stand. (Walk left.) Play ball. (When girl calls for help, walk into water and past bottom of screen. Wait until girl is laid down.) Shake and shout. Call for help. Establish airway. Look, listen, feel. Give two breaths. Look, listen, feel. Check pulse. Begin compressions. (Walk right.) Get shirt. (Walk up to hotel and open the door.) Walk to clerk. Get key. (Walk through east door. Stand next to

SAILING ALL OVER THE WORLD

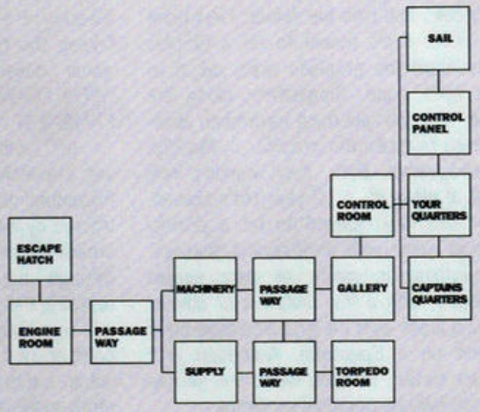
Michael Palin made a right meal of it in *80 Days Around the World* (whatever). If only he'd known how small everything really was. Of course, he didn't have these handy maps either, but that's TV peeps for you.

TAHITI



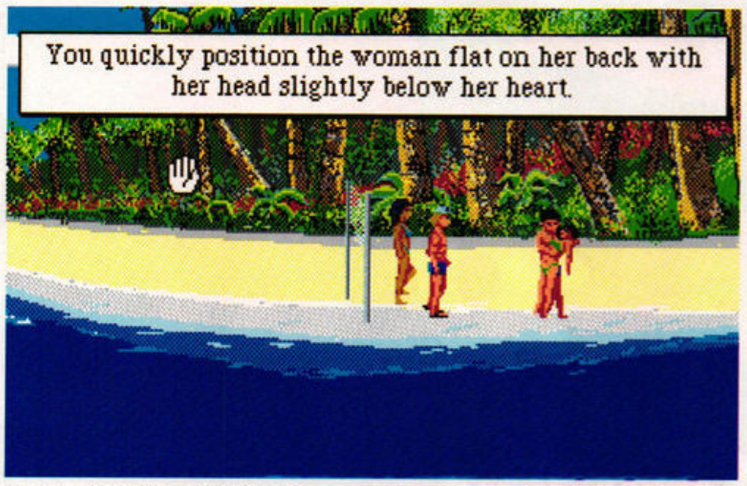
● You never thought Tahiti was so small, did you? A few beaches and some huts and that's it. Still, at least they've provided a volleyball area.

U.S.S. BLACKHAWK



● By comparison, the USS Blackhawk is almost the same size as Tahiti. But be fair – there's no volleyball area and hardly any beach in a nuclear sub.

www.stformat.com



● **I say, this isn't on. I didn't think he was that sort of hero. And with people watching, too! Some people have no shame. Could be interesting to see what use they make of that net, though.**

brunette sat by herself.) Ask girl to dance. (Stand next to her again.) Buy girl drink. (Stand next to chair opposite girl.) Sit. Yes. Kiss girl. Yes. Sit. Talk girl. Kiss girl (repeat five times). Stand. (Face table on north wall.) Look table. Get note. Open door. (Walk off porch and west until you see a sparkle on the ground.) Look down. Look glimmer. Get earring. Look earring. Open earring. Look inside earring. Get microfilm. (Walk five screens to the left.) Open door. Open drawer. Get ID. Get change. Open closet. Get black book. (Walk out of hut and go to the hotel. Stand in front of the newsstand.) Buy paper. Open door. (Wait for clerk's message.) Get message. (Go back to your hut.)

Read book. Use phone. 1-202-555-2729. Talk man. Use phone. 555-8000. Talk man. (Go to the start screen and walk onto dinghy. Walk through sliding door. Wait until limo appears.) Show ID. (When driver approaches walk up to desk.) Show ID. Push up button. Show ID. (Go through north door.) Stand. Get envelope. (Walk out of room. Walk to guard.) Get ID. Look ID. Get ID. (Walk out of Pentagon.) Talk man. Yes. Show orders. (Walk up gangway.) Salute flag. Salute officer. Request permission to come aboard. Open drawer. Get caliper. Open bookshelf. Get decoding book. (Walk left out of quarters. Sail submarine according to captain's instructions.) Stand. 134 (for combination). Look brief case. Get envelope. Look chart. Look orders. Get combination. (Walk out of quarters and to chart.)

Look table. (Use map to calculate coordinates.) Plot course. (Use direction keys to choose coordinates and press <Enter>. For the last set press <Enter> twice.) Exit. (Sail sub again.) Stand. Get messages. Look codebook. (Work out the words with the manual. Go to captain's quarters.) Open safe. 23448803. Open case. 762134. Use ID card. Insert microfilm. (Following the letter N is the number 3. Using the Navy decoding book add three to the CIA coded messages to find the CIA primary and secondary words. Use the same book to find both words for the Washington coded messages.) Close briefcase. (Go back to your quarters.)

Turn on computer. (Enter the primary decoded word for Washington, followed by the secondary. When the empty box appears type Y. Enter the primary and secondary CIA word. Press <Escape> when the empty box appears. Go to the torpedo room.) Cycle equipment. Inspect equipment. Measure conveyor belt. Measure cylinder. (Go to machinist compartment. Go to cabinet.)

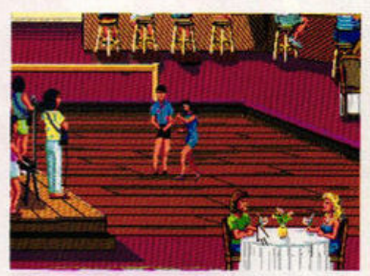
Open cabinet. Get cylinder. (Select six inches.) Get cotter pin. Measure cotter pin. (Walk to lathe.) Use lathe. Set lathe. (Select one inch.) Turn on lathe. (Go to drill.) Use drill press. Select bit size. (Select the quarter inch setting.) Turn on drill. Use grinder. (Go to engine room.) Open drawer. Get hammer. (Return to torpedo room.) Fix conveyor. Install cotter pin. Cycle equipment. (Go to galley. Walk to table with bottle.) Get bottle. Yes. (Win rum, money and device. Go to control room. Sail sub.) Stand. Talk. (Walk to control panel. Begin dive to below 500 ft. Turn active sonar off. Reduce speed to slow. Turn on silent running. (Wait until enemy fires weapons.) Fire weapons (after getting message). Stand. (Walk to radio man.) Get message. (Go to quarters.)

Turn on computer. (Decode messages from Washington and then CIA. Walk back to control panel.) Activate TV monitor. (Navigate sub through icebergs. Receive message.) Contact ice station. Stand. (Walk to radio man.) Get messages. (Decode message from Washington and CIA. Walk to control panel.) Sit. (Fast dive to below 1100 ft. Keep on diving while reducing speed to stop.) Turn active sonar off. Turn silent running on. (Keep diving until you reach 2300 ft. Destroy enemy sub.

Signal Coontz with one active sonar "ping". Manoeuvre through the straits of Gibraltar under the Coontz by keeping the small screen on the view of the submarine under the crosshairs.) Stand. (Go to periscope.) Look scope. (Write down the heading to the rig and harbour. Press the Downward arrow key on the periscope controls. Get the distance to the rig and harbour. Go to the machinist compartment. Walk to machinist mate.) Get key. (Go to storage compartment. Walk to locked compartment.) Open compartment.

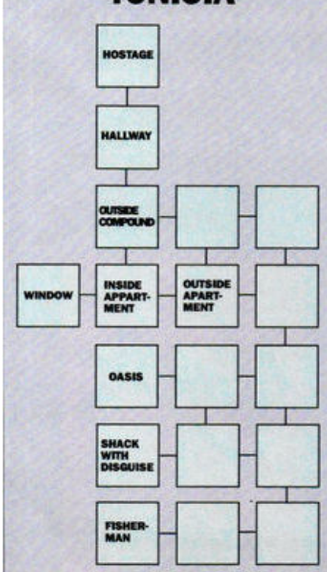
(Go to the torpedo room. Walk to the storage cabinet.) Open cabinet. Get explosives. Get flares. Get flares. (Go to the engine room. Walk to left bulkhead.) Look compartment. Push button. Look in compartment. Get diver. Look diver. Check diver. Check vibration. Check shaft. Look shaft. Measure shaft. (Go to mechanist compartment.)

Open cabinet. Get nut. (Select a half inch nut.) Get washer. (Select a half inch washer.) Go to engine room. Go to compartment.) Open drawer. Look wrenches. Get wrench. (Select a half inch wrench. Go to compartment.) Push button. Get diver vehicle. Install washer. Install nut. Tighten nut. Enter coordinates. (Enter the distance to the oil rig and harbour. Walk to the ladder.) Climb →



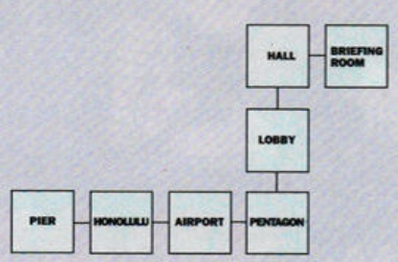
● **Implausible Caption No. 322: our hero finds the sea air is too much for his arthritis and his back gives way on the dance floor. Desperately trying to save herself from embarrassment, the nubile female whose night out he's just ruined attempts to click said back to its normal position before they're thrown out for looking silly.**

TUNISIA



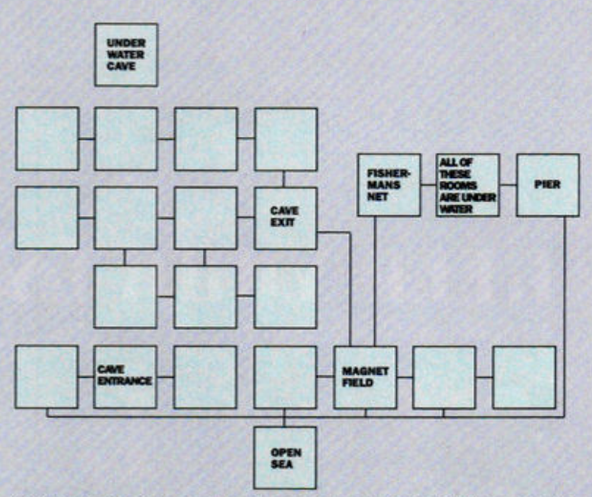
● **Tunisia! Home of – erm, nothing much really. Of course, it has got the essential Shack With Disguise – very popular with tourists, that one.**

PENTAGON/HAWAII



● **Step off the pier, drift through Honolulu, skirt the airport and you're in the Pentagon, which, as everyone knows, has only three rooms.**

SCUBA/CAVE



● **"And there, deep under the sea, we encountered the ancient and meaningful words All These Rooms Are Under Water."**

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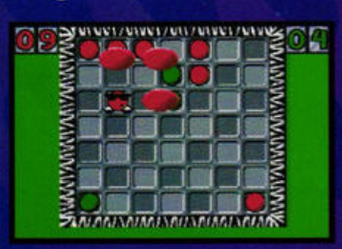
Amiga screen shots shown.



Virgin Leisure Genius

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ladder. Open hatch. Wear scuba gear. (Follow heading until you find the oil rig.) Set explosive. (Swim away as soon as explosive is set. Follow heading until you find the harbour. If you won the device earlier, use device and swim up the screen into the next one. If you didn't win the device, swim two screens left.

Get the bottle by the rock formation on the right. Find and enter cave.) Light flare. (Watch which way the current moves the debris to find your way out of the cave maze. Wait until the fisherman lowers his net.) Put bottle into net. (Wait until net appears again. Swim right two screens.) Hide diver vehicle. (Swim back to net, swim to surface, walk to fisherman.) Iceman. Look fish. Look line. Look hook. Remove hook. Look weight. Open capsule. Look map. (Walk north behind large rock. Walk into door on left.)

Look around. Open crate. Look clothing. Get clothes. (Walk right, then move up and left to reach the oasis. Walk to woman.) Iceman. Get map. Look map. Drop map.

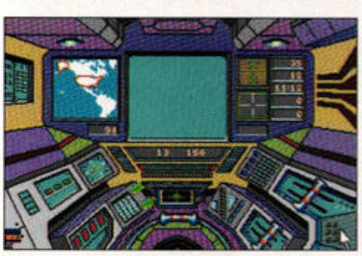
(Walk right, right, up, left. Go to Department 84. Go to kitchen counter.) Look canisters. Get small and middle canisters. Get suger canister. Open canister. Empty contents. Remove bottom. Remove rubber foam. Get gun. Open icebox. Get butter dish. Open butter dish. Get note. Read note. Get tape. (Go to the telephone.)

Look wall. Get business card. Use phone. 03-120-1204. Talk man. Use phone. 13-555-8097. Talk man. (Wait for the caterer to arrive.) Open door. (He will put down the platter.) Use gun. Remove clothes. Use tape. (When female agent appears walk out. Wait for van to stop in front of compound.) Hide gun. Get food. Exit van. (Walk to the guard on the left.) Put food on table. Remove lid. Get gun. Shoot guard. Shoot guard. (Go right up to the ambassador.)

Untie ambassador. Change clothes. (Go to the unconscious guard at the bottom of the screen.) Look guard. Leave.

You can now either take part in the mountain chase or press F8 to complete the game. In the chase, use the arrow keys to control the speed and steering of the van. Anticipate the turns.

Reach the top of the hill in one piece and that's it! You've completed the game!



● Congratulations on purchasing your new Class C nuclear submarine. If used properly it should give you many years of trouble-free service. If not used properly, it will break down within three minutes and refuse to work until you call it Charley and give it a big Cadbury's Creme Egg. Thank you for your co-operation.

ELVIRA

Accolade

Tim Bell of County Durham has come up with some of the goods for this adventure featuring the pneumatic charms of that odd woman in the black dress.

General hints:

1. Grab the hay in the courtyard.

2. Enter the main doors. On the left is the library – grab the recipe book.

3. Opposite here is the sitting room. Grab the cheeseplant leaf and the stake. Check the diary.

4. Go to the armoury on the ground floor. Get all the weapons and drop them outside the door. The armour and shield give good protection if you aren't carrying much and are heading into a difficult area. Use Longsword.

5. Make Herbal Honey in the kitchen. It's possible to get a burning coal from the kitchen and put it in the crucible (from the forge in the courtyard). Unfortunately, though, I don't actually know what it does!

6. The crossbow bolts are in the bedrooms, so search these carefully.

7. To kill the vampire, get the sledgehammer and crucifix from the garden shed. Incidentally, check all the trees and bushes carefully. Go up the stairs to the first floor – directly opposite the stairs is the vampire's room. Approach the bed and use the stake. Get the ashes.

8. To kill the werewolf you need to make a silver bolt. Get the bolts, the crossbow and the silver crucifix and put the crucifix into the crucible. Put the crucible onto the forge. Get a bolt and put it into the crucible, which is now too hot to remove from the forge. NB. Check the stables carefully for the Secondus key. Click on the bolt to use it.

● There's an obvious chance here to make all those old sexist jokes such as "Here's Elvira displaying both things she's famous for," but *STF* wouldn't ever do something like that. We're not nearly clever enough.

9. To kill the eagle, shoot it with the crossbow, but wait until it dives. Collect the Tertius key, the bolt and the feather.

10. It's a complete waste of time going to the herb garden unless you have had the Herbal Honey. The key is underneath the seed packets in the garden shed. Remember to turn around.

11. Once you're in a room, clear it out – a better fighter will be there the next time you visit it.

12. See the map for the layout of the maze. Fight the first gremlin hand to hand for an increase in strength, but beware of losing life. The crossbow and offensive spells are useful. To get through the hole in the hedge, fire in two offensive spells. On the way through, check for Elvira's ring. Check the pool carefully – it's easy to miss the black lotus.

13. There is a secret passage behind the dumb waiter in the kitchen, but, er, I don't know how to get into it – it's too dark.

14. Beware of the cook. Use salt or a very special weapon to get rid of her – normal weapons have no effect. The salt is in the torturer's room in the dungeon. Check the loose ring, and leave the tongs until you have interred the skeleton. Have a look round the catacombs for a suitable place to do this.

15. The four leaf clovers appear after a certain amount of the game has been solved. They may be found either side of the entrance to the falconer's field.

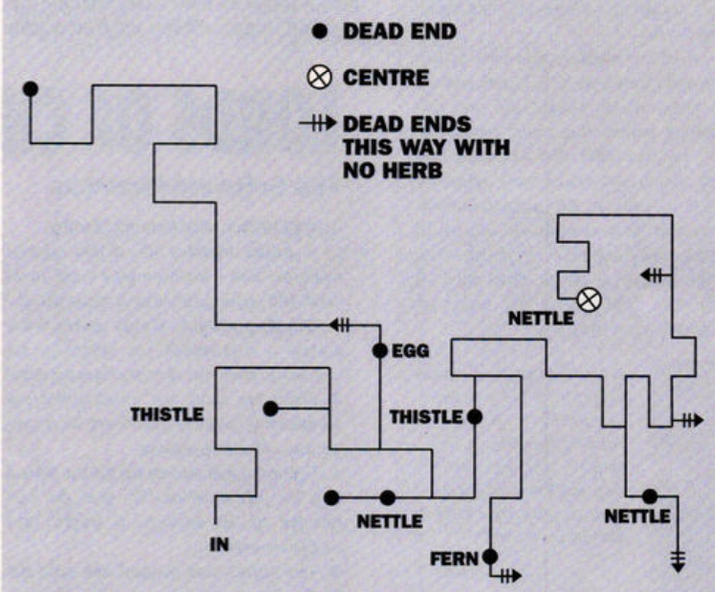
16. The monster in the catacombs who has the rune rock guards a rusty iron key. He has to be killed – try using one of the Surprise potions and the Crusader's sword. Get the rock.

17. The Grey Knight is a real pain, but he can be killed with a single crossbow bolt. If this doesn't work first time, go back to a saved game, solve more of the game and come back to him.

18. The catacombs are based on interlocking hexagons, so bear this in mind if you try to map them.

19. One of the keys is in the Chief Guard's room. Wear a good piece of armour and get him with a couple of the more powerful blasting spells.

20. Be careful when you're swimming around the moat. Swim under water rather than on the surface, because there are only a few screens of graphics for the surface and, believe it or not, your ST crashes if you're not careful.



● "No, no, no, you should have taken a left at the egg, mate! Straight past the thistle, over the nettle (careful there) and into Elvira's living room."

● The results of EEC Enquiry No. G1485323, Directive 43, title: Does Prolonged Exposure to a VDU Screen Damage the Eyes? The result, taken as a whole and allowing for seasonal adjustments, rainfall and demographic anomalies, is, er, yes.

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● At this point add the grapes and the chickens, mix thoroughly and pour into a wooden serving bowl. Place the bowl into a bush and leave for at least two weeks. Finally remove your straitjacket and return to the clinic.

CADAVER – THE PAYOFF

Renegade

PRIZE £50 WINNER

Collecting money from bad debtors is never easy. **Darryl Wedgner** has sent us the solution to level one of this tricky operation. So, listen carefully. He's also earned himself this month's £50 prize. Level two will appear as soon as Darryl can finish it!

Take diary and insert in slot. W, search bones for Urskines diary. W,N, move pillow for dagger. Open cabinet, take holy symbol and potions. S, W, N, open cabinet for key. S, W, insert key, N, search corpse for Valuins diary. S, E, E, E, insert both diaries in slot. W, N, pull middle lever; they now spell ORB. Take and use teleporter.

In the kitchen, take the chicken and search corpse for Furvals diary. Open cabinet for two Dispel Traps and pull lever. N, W, N, use Dispel Trap on box and open for dagger, blue casket, kill monster. Take sacks and bones for building. S, E, E, insert two daggers in altar, search skull for key. Open the chest for massacre spell and holy symbol. E, insert Fervals diary. W, N, open chest for gold. S, W, W, pull lever. W, give man the chicken, take stamina potion. S, drink superfast potion then quickly drink six beers, take lodestone and sack of gold. Drop coins on slime, take slime. E, kill bubbles by manoeuvering then under hammer, insert key and pull lever. E, E, put synbols in blue caskets, put caskets in box. Open box for dispel traps. S, E, push lodestone into corner so key hits teleporter. Open chest, insert key, take stamina and unlock chest spell. W, throw bones over rollers and build platform to pull lever. W, dispel trap on chest, cast unlock spell and open. Dispel trap on box and open. Dispel trap on casket and open. Take and activate spell. E, climb over rollers to south door.

S, drop three objects to jump overboard, pull lever, jump back to reveal orb, jump back again. W, drag tables below door, use reveal spell to build platform to door and take the chicken legs. W, drop slime to collect coins, takes lime. Operate lever with activate spell. Massacre bubbles, operate lever, jump on barrel, operate lever. W, push the button four times, right button once and left button three times.

W, throw chicken legs over spikes. Take and insert key. N, E, E, pull lever, E, pull lever. W, W, search slot and take superfast potion. Run round room, take coin, runback past first fireballs. Take more potion and dodge back after first fireball is fired, run past second fireballs. Insert coin, drop slime to kill bubbles. E, E, open chest and take everything – teleporter last. Use unlock door spell. N, inset key and (phew!) go west and straight to level two.

● Another golden opportunity here for a Julian Clary-style joke concerning Karadoc in the priest's passage, but it was cut for being too darn puerile. Probably for the best really.

AWESOME

Psygnosis

Want loads of dosh and energy? Look no further. Hold down the + key on the numeric keypad and press "Fire" over the shield icon for 2,000 units of money and fuel every time you visit a planet, and over the cannon icon to move all the energy bars. If that's not cheat enough for you, hit F1 during combat for warp drive or F2 for putting shields to 999. Use the keys 0 to 9 to change weapons. And, finally, while on the planet hold down F1 for setting oxygen to 99. Thank you, **Stephen Dennis** of **Birmingham.**

CHIP'S CHALLENGE

US Gold

A tip from **Jonathan Brown** of **Cleveland** – press F once to flip the screen, then enter the following phrases: SAGGITTAREANS MAKE BETTER LOVERS. to give infinite keys, water and fire shield; 09/12/57. for infinite time; I THINK THEREFORE I AM. so that no chips have to be collected. Include all full stops and spaces. C skips levels.

RBI 2

Domark

This quirk of Domark's incomprehensible baseball game was sent in by **Mark Harris** of **Ayrshire.** If your opponent gets a player to third base, hold the joystick left, press <Shift> and then quickly hit "Fire". The pitcher throws out the man at third base every time. Alternatively, to score a home run, follow these directions – push diagonally until your batter is in the top corner of the plate, wait until the pitcher has thrown and you can see the ball before swinging. If you've timed it just right, it sails straight out of the stadium.

NAVY SEALS

Ocean

On the high score enter WOZZIE, then during the game press <Return> to skip through the levels and W to cycle through the weapons. The man with the fish and the woolly jumper is **Gary Harper** from **Buckinghamshire.**

TEST DRIVE 2

Accolade

With petrol prices rising all the time, wouldn't it be handy to stock up now?

Type GAS at any time during play and you are taken off to the next gas station – one of several good ideas from **Jon Trelby** in **Bedford.**

DAYS OF THUNDER

Mindscape

Bill McLocklan of **Bradford** has supplied this unlikely-sounding tip. Pause the game and type COME FLY WITH ME. Unpause, press <Fire> and you should soar into the sky. But of course.

LORDS OF CHAOS

The Software Business

General tippery, also from **Jon Trelby.**

1. A wizard receives 4% of his original mana per turn – increase your mana to at least 100 so he gets loads of mana per go.
2. A healing potion is always useful. If you sustain a fatal wound you eventually die unless you drink the aforementioned potion.
3. Pixies are small and irritating but are permanently invisible. Excellent for scouting and collecting objects.
4. Teleport spells are useful for the wizard in a no win situation (for example, surrounded by 16 demons, a dragon, and numerous undead).
5. You should have at least one spell out of the fire, tangle vine, or blob because these spells are wide reaching and can damage all creatures (including undead).

● This month we begin our exclusive 270-part serialisation of the dialogue from the best film ever made, *Eraserhead.* This month's instalment: "Oh! You are sick!". Can you wait for next month? (Oh, this game is *Lords of Chaos,* by the way).

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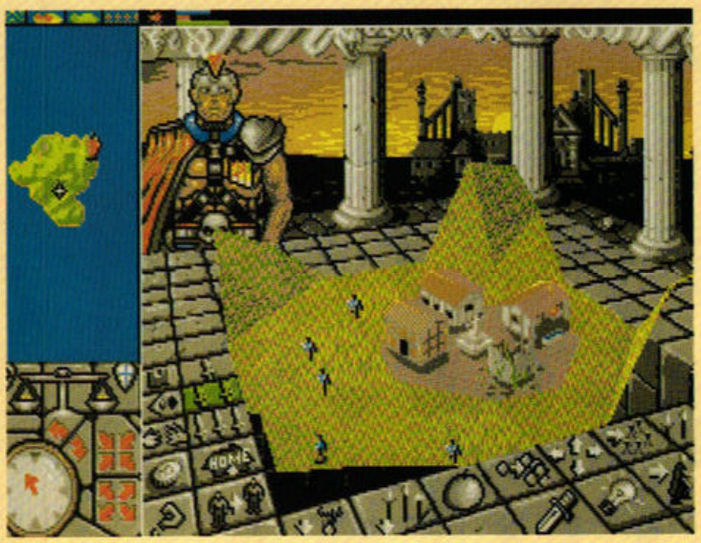
POWERMONGER

Electronic Arts

Leon Dawson has provided this simple way to win an island – provided you're playing with someone else via modem, that is. On the multiplay screen, choose either blue, red or yellow as your colour and don't assign one to the ST. Once you have linked, retire and then continue conquest. You stay the same colour as you originally chose and, if you go to an unconquered island populated by your colour, you automatically win it.



● Cheat! It's good for you and unless you're a particularly sensitive soul who cringes when someone swats a fly, your conscience should be guilt-free.

LOTUS ESPRIT TURBO CHALLENGE

Gremlin

Tony Barrett and **Geoff Fletcher** of **Somerset** have come up with this hintette for the early stages of the game in two player mode. Player one should finish first and stop just over the line. The other player then finishes second and crashes into the first player. The screens are then showing two first places, giving one of the players a huge head start in the next race.

DEFENDER 2

ARC

Wave after wave of aliens a bit too much? **James Cogan** of **Bristol** suggests typing in RAVEN while playing. Pressing N now teleports you to the next level and pressing L toggles invincibility.

ELIMINATOR

Hewson

Press "Help" on the title screen, then enter one of these passwords to progress further.

Level 2 AMOEBA
Level 3 BLOOOP
Level 4 CHEEKI
Level 5 DOINOK
Level 6 ENIGMA
Level 7 FLIPME
Level 8 GEEGEE
Level 9 HANDEZ
Level 10 ICICLE
Level 11 JAMMIN
Level 12 KIKONG
Level 13 LAPDOG
Level 14 MIKADO

J J Spain of **Barnstaple** worked that one out for you.

● If only all the balls were the same shape maybe you could get the hang of this here *Pool* game.

3D POOL

Mirror Image

Here are the solutions to the 20 trick shots on *3D Pool*, originally released by Micrprose but now available on budget under the Mirror Image label. To beat the game follow these tips, also from **Jonathan Brown** of **Cleveland:** Simply set the position of the table to these figures and watch the results.

1. 0768 024 63 10
2. 1002 041 63 09
3. 0032 100 63 00
4. 0962 024 63 00
5. 0512 024 63 10
6. 0405 060 63 20
7. 0018 061 63 20
8. 0771 099 56 12
9. 0932 024 63 11
10. 0927 027 63 20
11. 0751 100 16 20
12. 0916 025 55 10
13. 0004 054 58 20
14. 0864 100 63 10
15. 0084 076 12 00
16. 0880 048 39 20
17. 0372 100 63 10
18. 0512 100 63 10
19. 0601 024 63 20
20. No solution, define as you wish

FORMAT NEEDS *YOUR* TINTS AND HIPS

Yep! Tints, hips, peaks, chokes – *all* those silly words you type in to get infinite blancmange and higher scores – we want them all! If you've got a tip, a cheat, a short cut, an infinite lives poke, a password, a map – anything at all you've found that helps you get more from your ST game-playing – we want to hear about it! That way you can share your tips with well over 70,000 fellow ST enthusiasts, and possibly win *FORMAT's* monthly prize of £50. It doesn't have to be a complete solution or anything – *whatever* you've got could be the answer to a fellow ST game-player's prayers!

TIPS

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_____ Daytime phone _____

Brief description of tip _____

_____

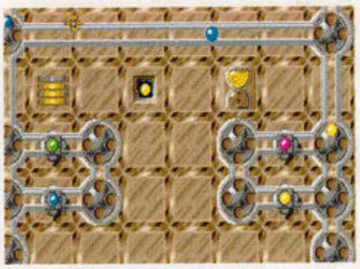
_____

Please complete this form and send it with your tip to: *Gamebusters, ST FORMAT*, 30 Monmouth Street, Bath, Avon BA1 2BW.

LOGICAL

Rainbow Arts

Now you can work your way through this thrilling puzzle game courtesy of **Jon Trelby** from **Bedford** (once again), who provides these useful tips. When you're on the loading screen, type ELOWANTS followed by the level number and you are able to go straight there.



● No matter what you do, it just isn't *Logical*. What *are* you meant to do with all these balls?

TOWER OF BABEL

Rainbird

This is a bit of a toughie. When you are collecting klondikes, turn the grabber to face the klondike and program it thus: "Fire", >, >, >, >, "Fire". Instead of just collecting one, it registers two. This makes it easier for you to advance through the later levels easier – quite a bit!

Cheers, **Jon!** (That was the last one from him – and from us till next issue!) ***stf***

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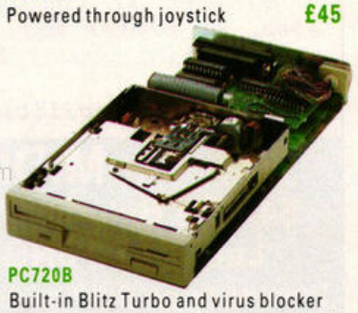

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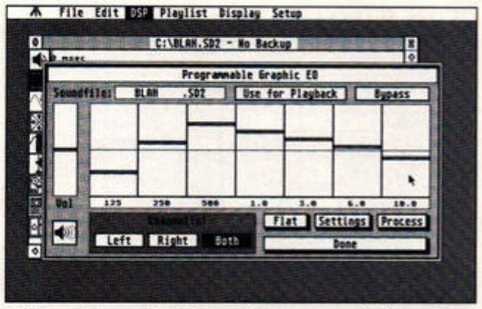
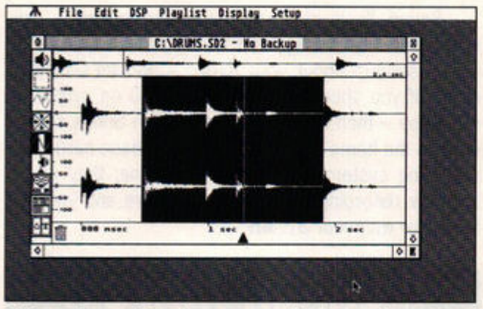
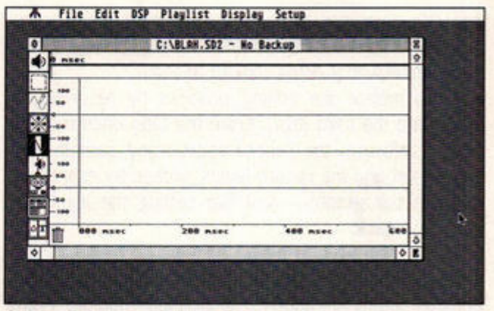


● If you have a graphic equaliser on your hi-fi you're likely to be familiar with this screen already. The various Hertz rates can be tweaked, so, for example, if the bass needs a bit of a boost you can crank up the slider on the far left using the mouse.



● To perform a function on a particular portion of a song, you first have to highlight it. Here three drum sounds have been highlighted. They can then be either captured for use in the playlist or have their sound altered to create a brand new effect.



● Opening a new file enables you to play a song through the digital to analog converter ready for re-mixing. Changes can be made song-wide or on a selected section of track, so even the smallest drum sound can be reversed, normalised or deleted entirely.

Sound Tools

Sound Tools

MACHINE: MEGA STs with at least 2MBytes of RAM and a large hard drive (at least 50MBytes recommended)
PRICE: £2,050
FROM: SOUND TECHNOLOGY
CONTACT: 0462 480000

It's a re-mixer's dream. Sample a song straight onto hard disk and create your very own mix of it. The 44.1 kHz Andy Hutchinson put the *Sound Tools* hard drive recording system under one arm and a Protar 160MByte hard drive under the other and went about mixing up some mayhem

You must have heard many examples of the art of the re-mix in the charts. If a record company want a record to sell well, they usually get a well-known DJ to do a cut-and-paste job on the original. In fact, they do such a good job that the re-mix often ends up sounding far better than the original.

Many of these re-mixes are created from the original master tape of the song. However, a new system has recently appeared which lends itself perfectly to creating revamped versions of songs. What's more, there's no tape involved. All you need is a Mega ST with 4MBytes of RAM, a large hard drive and the *Sound Tools* recording hardware.

The *Sound Tools* system comprises an analog interface and a sound accelerator card which sits inside your ST and connects to the interface. In addition, you need a large hard drive because for every one minute of sound you record, you need 10MBytes of drive space to store it.

The analog interface is a box which sits beside the ST. On the front are two input level knobs which enable you to trim the sound levels being sent to the hard drive, thereby avoiding distortion. On the back are two input and two output jack sockets and the lead which connects to your ST.

The sound accelerator card sits inside the Mega. It's needed because of the sheer amount of data being handled. At the heart of this board is a Motorola 56001 digital sound processing chip which enables you to play back 16-bit stereo sounds with a sampling rate of 44.1kHz (CD quality) straight from hard drive.

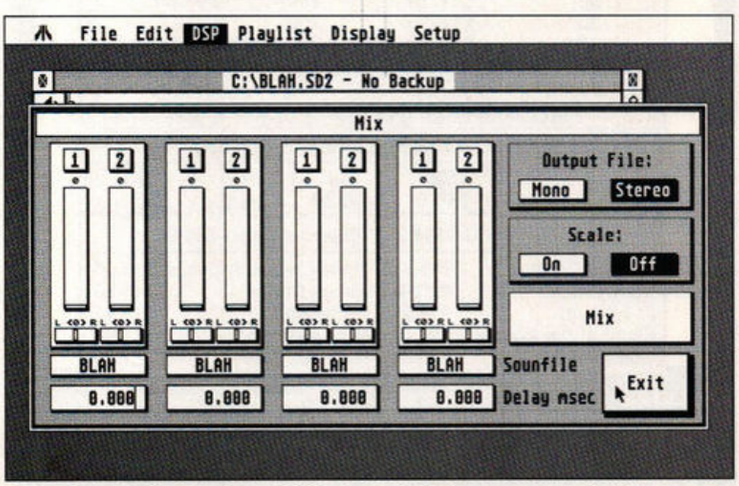
Sound Tools' controlling software is a sophisticated blend of sampling and tape edit control icons, →

WANTED: ONE *BIG* HARD DRIVE

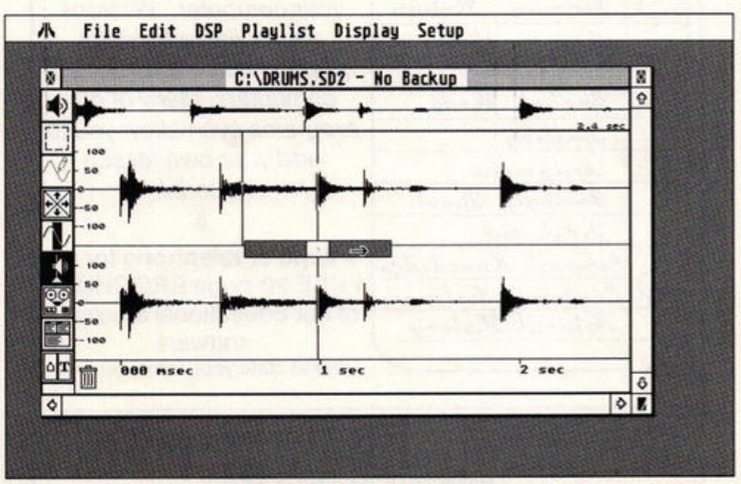
To make use of *Sound Tools* you need a massive hard drive. To test out the package properly we needed a hard drive that could stand the pace. Protar came up with a 160MByte drive that did just the job.

The Progate 160DC is a souped-up version of their Progate 40DC hard drive which we reviewed in our hard drive round up last issue. (If you missed that, check out our back issues service on page 130.) It's fast, reliable and has all the space you're likely to need.

If you're interested in buying one, expect to shell out £1,050. Protar can be contacted on ☎ 0923 54133.



● If you've got other tracks you'd like to mix together, you can controlthe process in real-time from the mixing screen, shown here. Up to four tracks can be mixed together, with full control over both left and right volume levels.



● When you're editing with tapes,it's common practice to rock the tape back and forth over the heads to find the exact edit point. This effect can be emulated with the Hard Disk Scrub function, controlled by left and right movements of the mouse.

www.stformat.com

and with it you can perform non-destructive editing on a song. In other words, you can reverse changes to a song which with just the click of an icon.

You initiate the editing process by recording a song onto the hard drive. From the tape deck module of the software, the record source and sample rate can be set and the record levels pitched by examining two clip bar graphs – just like setting the levels on your tape deck.

With the music in place, editing can begin. Creating a new song is simplicity itself, thanks to the ingenious implementation of a play-list module. From this section you can instruct *Sound Tools* to play back set portions of the song, mixing these together in nine different ways.

You can find portions of a song with great precision, thanks to the play/scrub icon. This process enables you to jog and shuttle the song backwards and forwards at any speed until the correct spot is found, and then mark this position. Repeating the process enables you to accurately define any portion of a song, such as the chorus or even a single drumbeat. Once this section has been defined in this way, you can name it and then call it from the play-list as often as you like.

You can fade channels in or out or mix them with portions reversed, gain changed and waveforms smoothed. You can also mix up to four sound-files together via the digital mixing window and the EQ of any song adjusted to levels you're happy with.

One of the most advanced features of the package is its ability to time compress or expand a sound-file. This means that sounds can be stretched or compacted to any length to fit in with your own designs in terms of specific SMPTE or time durations. In addition, the sample rate of sounds can be lowered to save on disk space.

Sound Tools is a very expensive system – you won't get any change out of £2,000. However, if you're serious about your music – and let's face it, many of you spend upwards of £2,000 on synthesizers alone – then here's a system which brings re-mixing into the home studio. The price of these hard drive recording systems is falling all the time; they represent the recording medium of the future and you can try it now with your ST. ***stf***

SOUND TOOLS

£2,050

Sound Technology ☎ 0462 480000

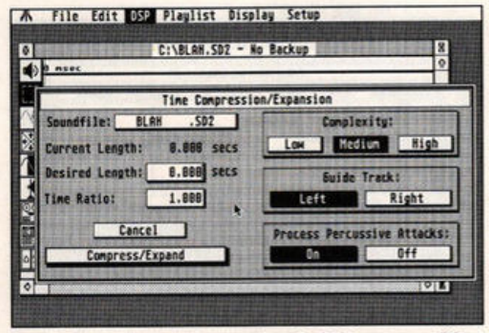
FEATURES: 95%
It's the wave of the future. Features that nobody's had access to before – and wodges of 'em.

SPEED: 80%
Some of the more maths intensive functions can take as long as 15 to 20 minutes, but when you consider what the processor is actually doing it isn't that long a wait.

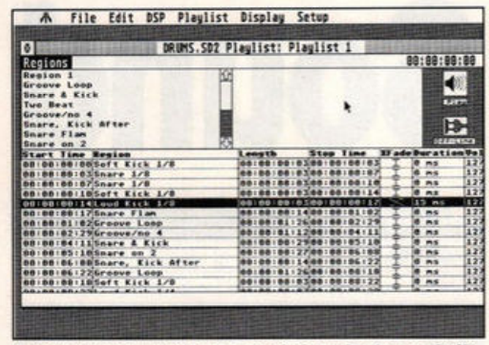
EASE OF USE: 95%
Simplicity itself. You can learn how to create your own remix in an hour and that includes nipping down to *Our Price* to buy a record to sample in the first place. Fitting the sound accelerator board inside the ST is a very simple job that anyone can do.

THE COMPETITION
Plasmec's *Adas* hard disk recording system is a hell of a lot cheaper at £839. It also comes in just one box, which means you don't have to take the lid off your Mega ST and go delving around inside. The price of *Sound Tools* is likely to drop soon. Watch this space!

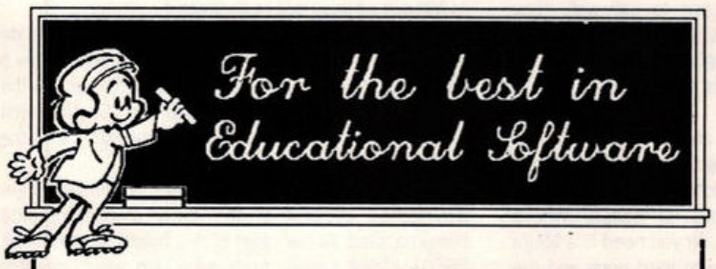
***FORMAT* VALUE: 82%**
The price of the hardware and large hard drive is extremely prohibitive, even though similar systems cost about £50,000 eight years ago. If the price dropped, we'd have a whole new music revolution on our hands!



● Thanks to the costly soundcard which comes with *Sound Tools*, data manipulation can take place. Here the compress/expand screen enables you to knock up or down the kHz sample rate with no discernable loss of fidelity but with considerable savings to the amount of disk space the data takes up.



● If you've sampled some music in order to re-mix it, then the play-list is going to be the most useful *Sound Tools* function for you. Here regions of a drum track have been captured and then named. At this point they can be re-arranged and faded in and out of each other to your heart's content.



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The C-LAB development philosophy continues with the release of Version 3.1 which amongst its many new features includes two vitally important innovations.

Firstly GRAPHIC ARRANGE. This radical new concept in music control allows the arrangement of musical events by combining visual access with audio control, thus giving far greater flexibility in the manipulation of complex compositions than ever before.

Secondly in recognition of the importance of complete integration with analogue tape based set-ups, comprehensive MIDI control of the FOSTEX R-8 is now available.

If you are a registered C-LAB user you will have automatically received full information on these and the many other new features in V 3.1 If however you have not yet registered or are new to the C-LAB Creator & Notator systems, please contact us for inclusion on the mailing list.

SOUND TECHNOLOGY plc

Sound Technology plc, Letchworth Point, Letchworth, Herts. SG6 1ND. Tel: 0462 480000. Fax: 0462 480800

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Choosing a memory upgrade for your Atari ST just got easier!

Once Frontier's XTRA-RAM *Deluxe* is installed in your ST, you can upgrade in stages to 4MB whenever you like - it couldn't be easier. Includes a two year guarantee and a no-quibble ten day money back offer.

Is your ST always running out of memory? Frontier Software's new XTRA-RAM Deluxe is the easy to fit and simple to upgrade memory expansion that you've been waiting for.

Thousands of ST users have already upgraded their STs to 1MB or 2½MB using the original XTRA-RAM in their homes and offices without having to send their computers away. Now Frontier, makers of the original XTRA-RAM, introduce their new memory upgrade - The XTRA-RAM Deluxe.

The experience, quality and expertise that went into the best selling XTRA-RAM has been applied to the new XTRA-RAM Deluxe. The XTRA-RAM Deluxe will upgrade your Atari STFM to 1MB then 2½MB and then 4MB with easy to install SIMM memory cards. Your Mega 1ST can be upgraded to 2MB and then to 4MB. Mega 2STs can be expanded to the full 4MB. Once the XTRA-RAM Deluxe is installed in your ST, you can choose when to upgrade further - you simply change or add SIMM boards - just like the ST^E. You can even use these SIMM boards if you later upgrade to the ST^E.

Easy To Fit

Installation of the XTRA-RAM Deluxe couldn't be easier. Following the instructions laid out in our simple to follow manual which is written with the non-technical reader in mind, you disassemble your STFM or Mega ST, plug the XTRA-RAM Deluxe into two places inside your computer and reassemble it. The whole process takes around 1½ hours and most STs will not require any soldering whatsoever.

The XTRA-RAM Deluxe fits all MMU chips (including the 100109) whether they are soldered down or not. If your ST has a soldered down Video Shifter chip or a 101601 type MMU then some soldering will be required. You can do this soldering yourself or Frontier or your dealer can do it for you for a small extra charge. If your ST has a socketed Video Shifter chip and an MMU which isn't the 101601 type, then you can fit the XTRA-RAM Deluxe without any soldering whatsoever. If you need any further explanation of this, contact Frontier direct.

No Need To Stop At 1MB or 2½MB

Most memory upgrades for the Atari STs will give you a simple upgrade to 1MB for about the same price as the XTRA-RAM Deluxe. Some of these upgrades may be as easy to fit as the XTRA-RAM Deluxe, but they do not allow you to expand your ST further. Once the XTRA-RAM Deluxe is installed in your ST, all you have to do to upgrade further to 2½MB or 4MB is install extra SIMM memory cards into the empty sockets on the XTRA-RAM Deluxe. This is a very simple process which takes less than ½ hour.

Don't restrict yourself to just 1MB. Make sure that you choose an upgrade, like the XTRA-RAM Deluxe, which can grow with your needs.

Totally Compatible

The extra memory that the XTRA-RAM Deluxe gives your ST is totally compatible with all of your ST programs. The ST's memory controller chip logs in the extra memory and makes it available for your programs. You will automatically get extra memory for DTP, word processing, MIDI, running the Atari Laser printer and everything else that you use your ST for.

Software Included

Each XTRA-RAM Deluxe upgrade is supplied with free RAM disk and printer spooler software and a free RAM testing program so that you know with certainty that your installation has worked.

Satisfaction Guaranteed

The XTRA-RAM Deluxe is supplied under Frontier's ten day money back offer - if you aren't satisfied with the XTRA-RAM Deluxe for any reason you can return it to the place of purchase within ten days for a full refund (participating resellers only). The XTRA-RAM Deluxe also carries a full two years' guarantee. The XTRA-RAM Deluxe is designed and manufactured in the UK. Unlike some ST upgrades, Frontier guarantee that each XTRA-RAM Deluxe uses only brand new SIMM memory boards - making your ST and its memory upgrade more reliable both now and in the future.

Prices

Frontier supply the XTRA-RAM Deluxe in four ways:

- XTRA-RAM Deluxe Unpopulated (without memory) £39.99
- XTRA-RAM Deluxe ½MB upgrades your 520STFM to 1MB (can later upgrade your STFM to 2½MB and then 4MB) £69.99
- XTRA-RAM Deluxe 2MB upgrades your 520STFM, 1040ST to 2½MB, Mega 1ST to 2MB or your Mega 2ST to 4MB (can later upgrade your ST or Mega 1ST to 4MB) £119.99
- XTRA-RAM Deluxe 4MB upgrades your 520STFM, 1040ST and Mega 1ST to 4MB £199.99

Please add £3.00 postage and packing to all orders under £120.00. All prices include VAT. Frontier accepts payment by Visa, Access, Switch, cheque or postal order. Prices subject to change without notice. Goods subject to availability. Specification subject to change without notice.

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Down to business

Last issue *FORMAT* showed you how *everybody* can exploit the range of "serious" software available for your ST. In the concluding part of our special two-part feature, Pat Standish looks at over 20 packages, both old and new, that can put the ST's business computing power at your fingertips, and assesses particularly how friendly and suitable each is for newcomers to "business" software

● **Somewhere in this inviting display there's likely to be a "serious" program to do exactly what you need.**

Last month we looked at the types of "serious" software available for the ST and some of their uses outside of the "business" tasks they were designed for. We interviewed ST owners who had taken advantage of their machine's broad range of abilities – from the book collector who uses a database to keep track of his collection to the retrenched salesman who has built up a business producing letters with his ST word processor setup. You don't have to be in business to make use of the wide range of ST business software.

Nor do you have to spend a fortune to find what you need. For around the price of a decent game you can pick up business software that can do anything you're likely to want. In fact, it's a good idea to aim low initially – packages bristling with features can be not just incredibly expensive but also extremely confusing for the beginner. If all you need is a simple flat-file database – like a card index on disk – to keep the addresses and telephone numbers of your friends, there's no sense in splashing out hundreds of pounds on a top-of-the-range relational package crammed full of sophisticated features you'll never need.

You should consider buying a fully-featured business package only when you have had some practice and know from experience which features *you* need or are likely to need. For example, like Richard Moss, the book collector interviewed last issue, you may find a flat-file database sufficient for some time, but Richard eventually realised he needed the extra power of a relational database – not to do the job, but to make his life easier.

Or take word processors. The simplest are little more than delayed-reaction typewriters, which is →

DATABASES

SUPERBASE PROFESSIONAL £249.95

Precision Software
☎ 081 330 7166

This has to be about the best database around for both home and business use. Unfortunately you pay for it. *Superbase* is a relational database, which means you can combine data from different related files to find exactly what you want. This is achieved using forms, which can be manipulated virtually any way you like. Extra features are tucked away, accessible when you want them but unobtrusive when you don't. Cheaper cut-down versions are also available, offering fewer facilities but ideal for the beginner. Data can easily be passed between versions if you upgrade later.

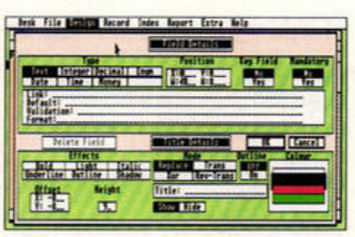
***STF* Rating 86%**

PRODATA £99.88

Arnor ☎ 0733 68909

***Prodata* was developed both as a stand-alone database and as a tool to integrate with Arnor's word processor, *Protext* (see page 107), and it shares many of the key combinations already familiar to *Protext* users. Arnor have also kept the control systems as close as possible across different formats and versions so familiarity with *Protext* or *Prodata* on any system automatically provides familiarity on another. Handy if you are upgrading. The latest version of *Prodata* (1.2) also features pull-down menus and flexible indexing (enabling you to index up to four fields simultaneously). Data can be exchanged with the program running on other machines with a minimum of fuss. The only major restriction is that you need 1MByte of RAM to run the program.**

***STF* Rating 74%**

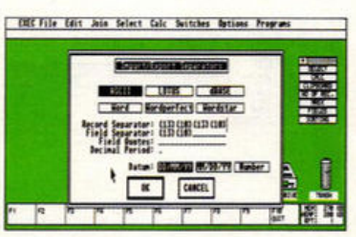


DGBASE £49.99

Digita ☎ 0395 270273

Another program with integrating facilities is *DGBase*, which is designed to be useable with Digita's *DGCalc* and *Mailshot Plus*. One shortcoming: if you need to handle vast amounts of data then problems might crop up, since only 64 fields of 255 characters each are available. While this shouldn't cause too many difficulties for storing names and addresses or anything of that sort, it is a limitation, particularly if you wish to hold chunks of text – 255 characters is not very many. Overall, though, this program is just the thing for anyone with fairly modest database requirements and a pocket to match. The manual could be better but the program itself isn't too difficult to use and tutorial files provided on disk help the newcomer get started.

***STF* Rating 71%**



ADIMENS £136.30

Kuma ☎ 0734 844335

This powerful relational database package consists of three modules – one for setting up a file, one for working on it and yet another for reorganisation. Kuma claim that the package has an "intuitive front-end" – that is, control system – and each module has its own comprehensive manual section, but while everything you need to know is there, finding and understanding the information isn't too easy and the beginner is likely to have a hard slog to get going at all. The main problem is the use of both database jargon and business language (like "intuitive front-end"). Once set up, though, *Adimens* offers all the features you'd expect from a good quality database, but it's more for the professional and isn't really suitable for simple home and hobby applications.

***STF* Rating 70%**

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fine if all you need is the ability to type the occasional letter to your bank. But if you fancy editing a newsletter or writing a blockbuster novel, you need something both faster and more sophisticated – with features like spellchecking, a thesaurus, faster screen-update and the ability to import graphics. Ultimately you may decide you can justify spending big money on a fully-featured DTP package.

On the whole you get what you pay for, but for complete beginners it is worth having a look at the Public Domain – virtually every type of business software is represented there and can be picked up for just a few pounds.

THE PUBLIC DOMAIN ALTERNATIVE

Public Domain programs are software that the programmers have released for anyone to use, free – you pay the PD library three or four pounds for the service and can then copy and use the program almost as you like. No matter what type of "serious" software you're after, there's bound to be a PD program with everything you need for around £3.

If you're looking for a word processor, you need go no further than *ST Writer Elite* on last issue's Cover Disk – or, if that's not quite right for you, check the PD alternatives in *FORMAT's* roundup of WP packages in issue 22. (And if you missed either of these, turn to page 130 for info on ordering back issues.)

Want a database? Before you go for the expensive commercial packages, try *DBMaster 1* – we review it this issue in our PD section (beginning page 47) and award it *FORMAT* Gold. Need a spreadsheet? We reviewed *ST Sheet* in issue 18 and gave it a rating of 85%, and *GEMCalc* earned 80% in *STF* 23. How about a home accounts package? Try *Opus 2.2* – we gave it a whopping 93% in *STF* 18. Or take a look at *Electronic Bank Statement* (Budgie disk PRO-1), or *Double Sentry*, which *FORMAT* tested in issue 21 and awarded a rating of 80%. All these programs are available from Softville PD Library (☎ 0705 266509) and many other PD libraries – see *FORMAT's* comprehensive directory, page 50, for the one nearest you.

There is, however, one big drawback with PD. Business software, much more than games, has a pretty steep learning curve. Even the cheapest commercial publishers offer some sort of backup and help you configure their programs to suit you. Many will cheerfully hold your hand during the initial period of familiarisation (although occasionally you may be asked to pay extra for this type of help). With PD, by contrast, you are on your own, and documentation of PD software, while occasionally excellent, tends to be sparse. Even when a decent manual is supplied on disk you need to be able to print it out – on-screen help is rare.

For around the price of a decent game you can buy "business" software to do anything you're likely to want – there may even be a PD alternative for around £3

Still, so long as you have had some experience of serious software or you have some idea of what you are doing, PD is an excellent source if you don't need anything too sophisticated. Look out too for shareware. Under this system you buy the program from a PD library just like PD, but you are obliged to send a donation to the programmer if you continue to use the program. In return for a small charge (usually still less overall than even the cheapest commercial software) you generally receive both printed documentation and personal help.

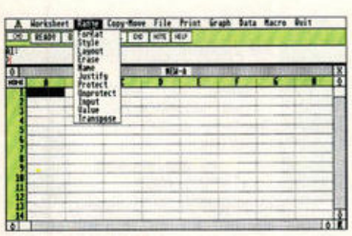
PUTTING IT ALL TOGETHER

You may find pretty quickly that you need more than one type of program. Mandy Allen, the local football league organiser interviewed last issue, found she needed to use names and addresses both in her club records database and in her word processor's mail merge facility. A small business is likely to use information about its customers in a variety of different ways – for instance, a customer's name and address are needed both for invoicing and for mail-shots. Similarly, invoices need customer balances, as do the accounts for the debtors' total. To save having to type this sort of information over and over again, different programs need to be able to read and understand one another's data.

A business deciding to computerise is going to need at least a word processor and a database, and perhaps a spreadsheet or accounts package too if handling its own accounts. Before you decide what programs to buy, check that files saved from one package can be loaded into and used by another. ASCII (American Standard Code for Information Interchange) is the standard format used for text files and most packages should be able to import (that is, read) and export (write) such files.

Somewhere in the range of "business" software available for your ST, you're sure to find the package to suit your individual needs, *whatever* they are. Start looking and one thing could lead to another, opening up a whole new world of serious ST power. ***stf***

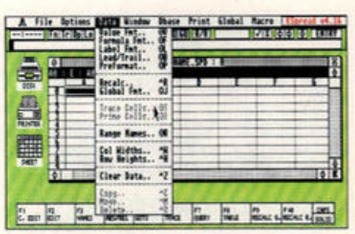
SPREADSHEETS



LDW POWER £114.95
Silica ☎ 081 309 1111

A deserving favourite in the spreadsheet stakes is *LDW Power*, long bundled with some STs. It is extremely simple to use but has plenty of the power implied by its name and is suitable for all uses, both home and business. Its manual is pretty hefty but clearly laid out. Plenty of screenshots illustrate various functions, and the text isn't too dry. Several pages cover error messages, but instead of the bare definitions usually found in manuals each comment tells you what you have probably done wrong and often suggests how to fix the problem.

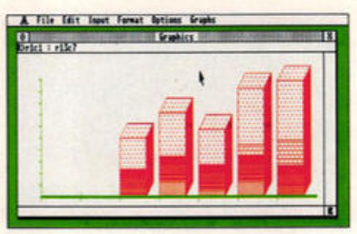
***STF* Rating 84%**



KSPREAD 4 £136.30
Kuma ☎ 0734 844335

With the fourth incarnation of *K-Spread*, Kuma have introduced graphic facilities and GDOS support to a very successful and well received program. It can load and save data in all popular formats and offers the intriguing option of "live" graphic display of data as you input it. Like *LDW Power's*, the manual is enormous, but is very easy to follow even for rank beginners – initially only the simplest concepts are dealt with, allowing for a gentle learning curve. The range of features is likely to make your head spin at first – it even includes stats and trigonometric functions. While rather expensive for home use, this program is one which should be able to handle just about anything you can possibly throw at it, both now as a hobbyist and in the future for business.

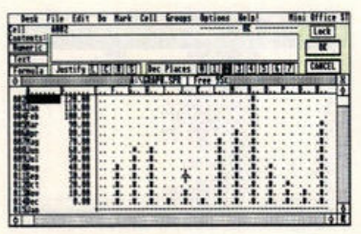
***STF* Rating 80%**



GRAPHICSHEET £20
Glentop ☎ 0734 794941

Described as a professional analysis package, *GraphicSheet* certainly seems to offer all the features and capacity you could need, and its potential is absolutely enormous – up to 65,000 or more columns and the same number of rows (memory and disk capacity permitting). You can have up to seven windows open at one time and display charts and spreadsheets together. The manual is excellent, with a minimum of jargon and plenty of screenshots illustrating various operations. Plenty of "silly" points are covered, such as the use of scroll bars, enabling even beginners to get going quickly and easily. Although a bit long in the tooth now, *Graphic-Sheet* should cope with most home, hobby and small business needs in a simple and easy to get into way.

***STF* Rating 76%**



MINI OFFICE PROFESSIONAL £25
Europress Software
☎ 0625 859333

This spreadsheet module contains two disks, a manual and a handy quick-reference card. The manual is presented in a chatty tutorial style, more like a series of articles than a dry text book. It is aimed directly at the beginner who may never have seen this type of program before and explains both the necessary concepts and the control method. A fairly comprehensive range of functions is available and Desk Accessories can be called during use. Though aimed at beginners, this should provide sufficient power for the home or hobby user in addition to small business projects.

***STF* Rating 56%**

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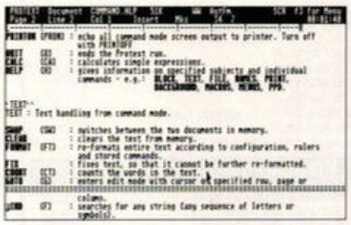
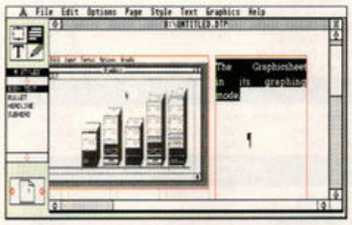


PROTEXT 5.5 £152.75

Arnor ☎ 0733 68909

The journalist's choice, *Protext* offers speed, flexibility and now pull-down menus and a pretty good spell checker and thesaurus – but if you're only writing letters it's worth looking at earlier (and cheaper) versions – all with the same controls, so there's no learning from scratch if you need extra power later. *Protext* doesn't quite give you on-screen what you're going to get on paper, but some effects like bold and underline are displayed on-screen, text can be put in columns and pages can be previewed before printing. The best text cruncher around!

***STF* Rating 93%**

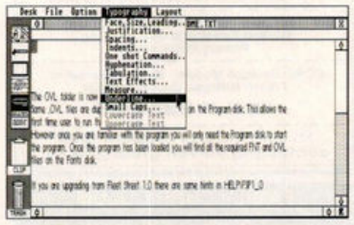


TIMEWORKS DTP £99.99

Electric Distribution ☎ 0480 496789

Not a word processor but a full desktop publishing package, this is nevertheless a doddle for beginners, although it doesn't have quite the flexibility of *Fleet Street Publisher* (reviewed at right). It enables you to import, generate and mix text and graphics, and on a colour monitor in medium res the display is much clearer than *FSP's*. One drawback is not being able to save individual pages from a document without wiping out all the other pages first – such a facility could be handy if you create something which can be used in a stand-alone manner. A good variety of fonts and sizes is available, as is picture cropping and re-sizing. Graphics may be hidden once imported, which speeds screen-update no end.

***STF* Rating 88%**

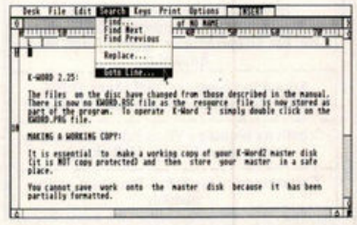


FLEET STREET PUBLISHER £159

Silica ☎ 081 309 1111

This DTP program is ideal for producing leaflets, newsletters and fanzines. Text can be typed in directly or imported from word processors, while the graphics facility enables you to load your favourite creations in from disk and manipulate them. Different fonts are available in all sizes, and combined with a decent printer quite professional looking jobs are possible. Of the two low(ish)-cost rivals *FSP* is more flexible, although this means it's also relatively difficult for the rank beginner. Well worth a look though if you fancy DTP. An updated version is due soon – watch for the *FORMAT* review.

***STF* Rating 85%**



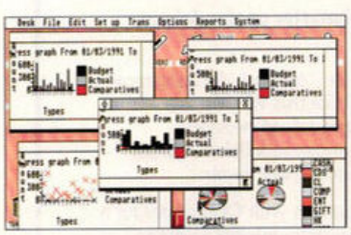
KWORD2 £41.00

Kuma ☎ 0734 844335

For a basic, unexciting but useable word processor, *K-Word 2* is ideal for the beginner. Virtually all the standard WP features are included, text formatting and manipulation are about as good as any, but getting at it all isn't necessarily so easy. Perhaps the handiest feature is the facility to have four windows on simultaneous display. While only one can be active at once, text may be cut and pasted between them using a clipboard facility. Spell checking is also included, but you need to run that program separately (after de-archiving it). As a useful addition, think about *K-Roget*, a thesaurus (of course) which – although it costs extra – can be loaded as an Accessory and be available while *K-Word* is running.

***STF* Rating 76%**

ACCOUNTING

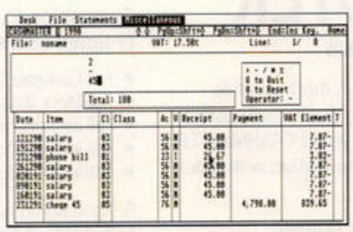


HOME ACCOUNTS 2

£54.95 Digita ☎ 0395 270273

Although *Home Accounts* was already a successful program, Digita have really pulled the stops out with v2. Following user comment, the package has been made both more flexible and simpler to use. In addition to the usual facilities for keeping track of income, payments and balances, v2 enables you to display data as charts and graphs, as well as calculate interest with a built-in calculator. The manual is excellent – it now remembers to tell you what to do instead of just what not to do. Check out the demo on this issue's Cover Disk.

***STF* Rating 90%**

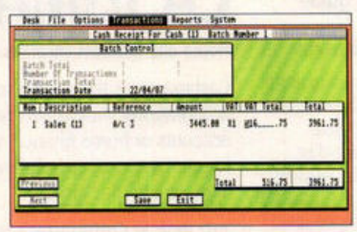


CASHMASTER £39.95

Intraset ☎ 0257 276800

Keeping track of your household or small business accounts can be a real bind. If you want to avoid paying over the top to either your accountant or the taxman, have a look at this. Developed by Intraset when they couldn't find the features they needed in other programs, *Cashmaster* is a highly flexible (though fairly simple to use) accounts package at a reasonable price. The main strength of the program is flexibility. While the manual is a bit sparse and you need to know what you are doing, the program itself is quite an eye-opener. Many offerings like this fall over backwards to be friendly and end up like a strait-jacket – not *Cashmaster*. It may be daunting at first, but stick with it and it rewards the effort.

***STF* Rating 86%**

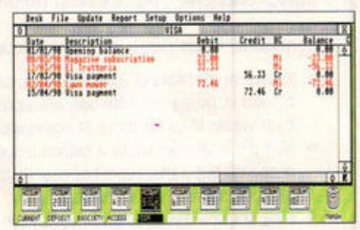


CASHBOOK COMBINATION £69.95

Digita ☎ 0395 270273

For anyone who needs to keep track of income and expenditure as well as analyse where the expenditure is going (phone, travel and so on), this package includes *Cashbook Controller* and *Final Accounts*. It is better suited than *Cashmaster* to the novice who wants a simple financial record without necessarily knowing the significance of the figures thrown up by *Final Accounts*. However, credit sales and purchases are provided for, in addition to cash and petty cash books, making this an excellent user-friendly choice for the part-time businessperson.

***STF* Rating 80%**



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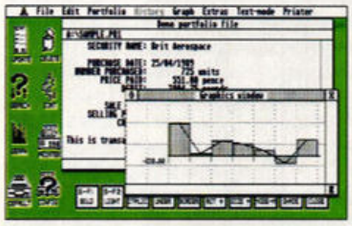
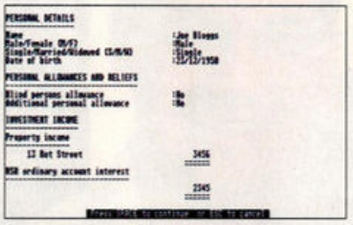
MISCELLANEOUS



PROSHARE ST £49.95
TC Developments ☎ 0937 61145

This is essentially a database dedicated to share prices, together with a report program which monitors the progress of shares over time. With the ups and downs of recent months, the stock exchange seems quite a gamble for those with money to invest, and rather a disaster for those without. This program could be usefully applied either as an early warning indicator (if you're lucky) or an educational tool for demonstrations of how the stock market works.

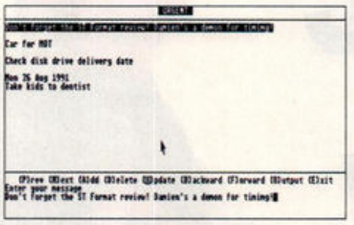
***STF* Rating 69%**



PERSONAL TAX PLANNER £39.95
Digita ☎ 0395 270273

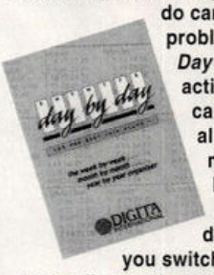
Assuming you've made good on your shares (with the help of *Proshare* or without), wouldn't it be a good idea to see just how big a slice of your profits and earnings the taxman intends to take? Even if paying the electric bill is as close as you've come to investing, *Personal Tax Planner* acts as an interactive tax return, asking all the normal questions and then telling you just how much you'll have to pay out. It can also cope with a certain amount of "what if" in terms of pension payments and married couple election. What *PTP* doesn't do is fill in your tax return – you still have to do that by hand, but at least you can refer to the printed figures instead of back-of-envelope scribbles.

***STF* Rating 74%**

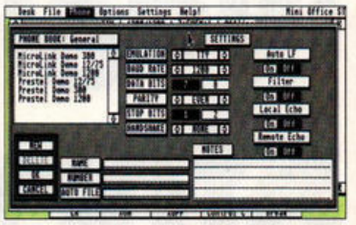


DAY BY DAY £29.95
Digita ☎ 0395 270273

In this busy world, keeping track of all the important things you have to do can become a problem. *Day By Day* is an interactive diary/calendar. Feed in all your appointments, then boot the program every day. Each time you switch on, the program tells you the coming week's commitments, plus urgent and (in our case) drastically overdue ones. Separate sections can be defined, such as household, work, leisure, and so on. Very easy to use – but check out the PD alternatives, as well as *Diary* on *STF* Cover Disk 26.



***STF* Rating 88%**



MINI OFFICE – COMMUNICATIONS £21.95
Silica ☎ 081 309 1111

Why not log on to a bulletin board or conference? With a phone, a modem and this software, the world is at your feet. It needn't mean huge phone bills – most of Britain is covered by local-dial boards where you can pick up free software and exchange questions and answers on virtually any topic. This *Mini Office* module gives you access to the world of comms and includes a couple of numbers built-in to start off. Check out the PD alternatives like *Vanterm* as well – see *STF* 23 for all you need to know about comms.

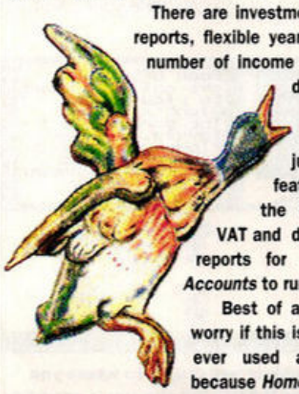
***STF* Rating 71%**

WIN AN EVESHAM MICROS HARD DRIVE WORTH £325

To promote the release of their brand new accounts package, *Home Acoounts 2*, Digita are giving away a Zydec 40MByte hard drive from Evesham Micros worth £325

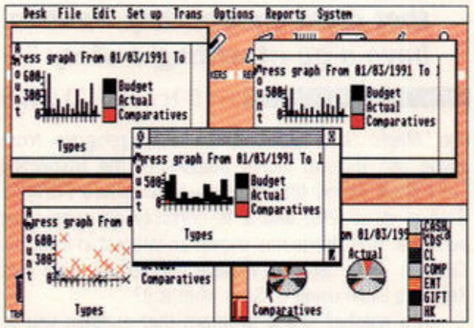
Four years in the ST business market has taught Digita much about the right way to produce business software. After their release of the original *Home Accounts* package they listened to the criticisms and recommendations users made about the program, then went ahead and worked on producing the best ST accounts package. *Home Accounts 2* is the result.

Tailored to meet the needs of small business and home use alike, *Home Accounts 2* comes with all the features you'd expect in a top-of-the-range accounts program – and many you wouldn't.



There are investment accounts, custom reports, flexible year period, an unlimited number of income accounts and expenditure types, and cheque numbering facilities, to name just a few of the new features. Then there are the options to calculate VAT and display business style reports for anyone using *Home Accounts* to run a small business.

Best of all, you don't need to worry if this is the first time you've ever used a business package because *Home Accounts 2* is a very intuitive package. With an extensive step-by-step manual and an on-line help system, you're guided by the hand through everything you want to do.



● ***FORMAT* Gold winning *Home Accounts 2* can help you win a 40MByte hard drive! What a program!**

When you want to present your information you have a variety of statistical analysis options. Show your data as pie charts, scatter grame, line graphs or even 3D bar charts which can be stacked up. The range of printer drivers supplied means you can then go ahead and print the information out to your printer.

What more could you want? For just under £55, this represents ultimate value for money, which is why it won a *FORMAT* Gold on page 107.

But you've got to earn a prize. To weed out the good from the bad we're posing ten tricky teasers. Brush up on your knowledge of ducks to answer the first five, then whip out the demo of *Home Accounts 2* on this month's Cover disk to answer the last five.

1. In which television series did the Torquay hotelier say, "Sorry, duck's off"?
2. Name the President who, after an unsuccessful assassination attempt, said to his wife, "Honey, I forgot to duck."
3. Which comedy team supposedly made a radio recording of Alastair Cook being attacked by a duck?
4. What normally accompanies Peking or Crispy Duck?
5. *Home Accounts 2* uses Digita's HIP interface system. What does HIP stand for?
6. What is the name of the default colour palette?
7. When you create an Income and Expenditure report, how many styles of report can you choose from?
8. What is the default printer driver in *Home Accounts 2?*
9. What is the Desktop icon for a Savings Account?
10. What does the I button on the calculator do?

Get your answers on a postcard and send them off to Duck's Off, *ST FORMAT*, 29 Monmouth Street, Bath, Avon BA1 2DL. All entries must land on the *ST FORMAT* doormat by Monday 25 November.

All the usual rules apply: no late entries will be accepted; no employees of Future or Digita are allowed to enter, nor are their relatives; only one entry per household; the decision of the Editor is final. Got it?

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Magic Story Book

What do you think you'd call a program that enables you to write a story and then add sound effects and animated pictures to it, either using ready-made sprites or creating your own? A child's dream come true? The authors call it *Magic Story Book*. *STF's* education expert Terry Freedman evaluates it and tells the inside story of its development

● When Jayne and Richard Dunn couldn't find the right program for their daughter Rebecca, they just wrote it themselves!

THE AUTHORS

Jayne and Richard Dunn are the joint authors of *Magic Story Book*. Jayne was the creative force behind the program, while Richard did the programming using *STOS*. The amazing thing about them is that neither has a background in computing. They decided to write the program because there wasn't one around at the time – three years ago – which was suitable for their daughter, Rebecca. In Richard's words: "The state of the educational software scene was pretty abysmal."

Was it a daunting prospect to write their own educational software? As far as Richard is concerned, anyone who can think logically can write a program, particularly if you use something like *STOS*, which does a lot of the work for you.

Three years on from when the Dunns started writing their own software, is the situation in the marketplace any better? Well, er, yes-ish – it could still be much better. Richard makes the point – which I'm inclined to agree with – that, despite the potential power of the ST, there's very little *excellent* educational software for it compared with the much less powerful BBC micro.

Richard hopes that *Magic Story Book* will encourage others to try *STOS* because, he says, "I think that everyone should have a go at writing programs."

In the meantime, there's certainly plenty of scope for more imaginative and more sophisticated software on the education market, if any software house wants to rise to the challenge.

Rebecca's role in all this shouldn't be forgotten. Apart from inspiring the search for, and then development of, suitable software in the first place, she has tested it at every stage. What she likes about the package is the ability to move elements of the pictures around – but she still likes using her crayons the same, and doesn't intend throwing them away just yet!

"The idea of the program is to create a feeling of magic so that children feel they want to have a go at writing a story."

RICHARD DUNN

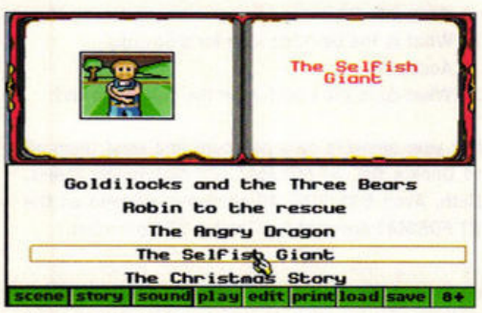
Magic Story Book

MACHINE: ALL COLOUR STs
PRICE: £29.95
FROM: SOFTSTUFF
CONTACT: 0732 351234

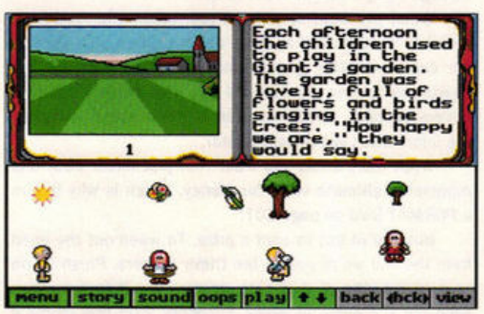
There are plenty of drawing packages available for the ST, several animation programs and a plethora of good word processors – but now there is a package that combines all three and is easy enough for pre-school-age children to use. *Magic Story Book* is the latest program from Jayne and Richard Dunn, authors of the respected *Let's Spell* series (the fifth in which earned *FORMAT* Gold in issue 24), and it is certainly an impressive package. Rolf Harris has shown an interest in it for his *Cartoon Club*, and HTV have filmed six year old Rebecca Dunn using it. So... what *is* it?

In a nutshell, it's a program that enables you to write a story and then illustrate it, or vice versa. Of course, you can do that with some crayons and paper, but can you *animate* your pictures? And add sound? 'Cos if you can, send us the name and address of your stationers! With *Magic Story Book* you can even do a spot of programming to edit the animation sequences.

It all sounds rather complicated but in fact, like all good ideas, it's breathtakingly simple. Imagine a blank piece of paper in front of you, on which you're going to write and illustrate a story. You've also got a pile of ready-made backdrops you can use for the illustrations, and a load of characters and objects you can place on top of the backdrop. You've also got some ready-made text to jiggle around, and a pencil (remember what that is?) so you can write your own from



● Start up *Magic Story Book* and after a short loading sequence you get this menu. *Dragon* demonstrates all the program features, but let's choose *Giant*.



● You start with just a backdrop – but you can change it if you like. How about adding some of the elements on offer at the bottom – sun and some clouds, say?

● Just click on any object and drag it to where you want it. You can't see it here, but the sun is sparkling and the cloud is moving across the sky!

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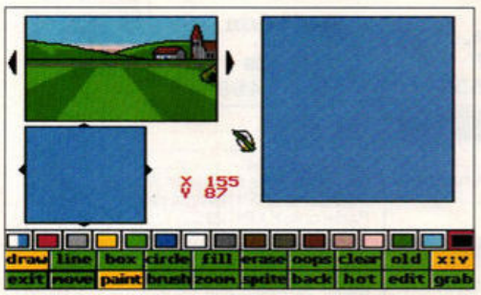
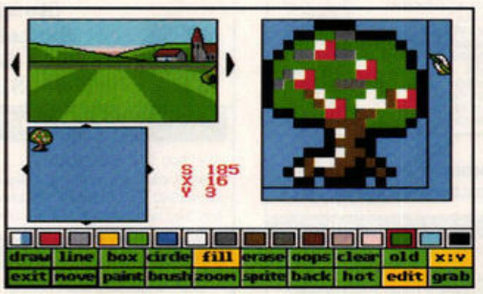
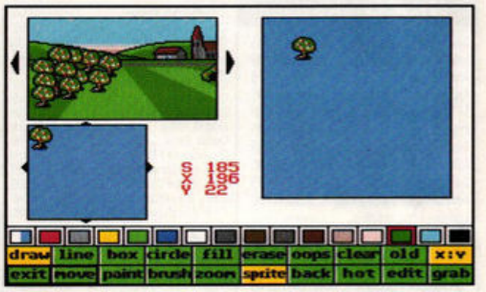


● To edit the sprites supplied, you use the Editor's scroll and zoom windows. You can even adjust the x and y coordinates for precise animation effects.



● Some are repeated, but there are about 255 sprites in each of the five stories. Select one from the bank and it appears in the zoom box for close-up editing...



● Add some apples, alter the colour or shape, even flip the sprite upside-down, then paste it as many times as you like into the main pic – instant orchard!

scratch. Obviously, with this range of tools at your disposal you could be pretty creative and it would probably take you a while to get bored. Now, stick all of this into an ST program, add animation and sound to boot, and you've got *Magic Story Book*.

All of this is crammed onto one program disk, and for your 30 quid you also get a fairly comprehensive manual. The disk itself contains five stories of different types which you can use straight away. Stories can be up to 24 pages long, although the ones supplied are shorter than that. Richard Dunn says: "The idea is to create a feeling of magic so that children feel they want to have a go at writing a story."

The illustrated sequences on these pages demonstrate the abilities of the package, and it is set up in such a way that it enables you to get good results almost immediately. This means you enjoy the feeling of self-confidence that comes with achieving something – which, in itself, encourages you to go further. This is what educationalists and teachers have been advocating for years.

"When we started* Story Book, *the educational software scene was pretty abysmal."

RICHARD DUNN

Magic Story Book isn't just educational software in the sense that a spelling tutor might be; it's a very nearly complete creativity package, and there are several areas where it could be used, both at home and in school. For example, you could use it to illustrate a poem with animated cartoons.

On a more sophisticated level, you could use it to illustrate the workings of the economy, or the internal combustion engine. One of the demos supplied on the disk is of the heart's circulatory system, although that is arguably more of a novelty than an educational aid. Many aspects of the National Curriculum are addressed by the program, and its versatility means that children may eventually be able to use the same software at home as in school. This program is →

HOW THE PROGRAM WAS DEVELOPED

How did *Magic Story Book* start? It looks like the kind of program that would come to you in a flash of inspiration. In fact, it was a gradual and logical development from the *Let's Spell* range of programs Richard and Jayne wrote earlier. They were inspired by three things:

- their daughter Rebecca's ability to draw and write was not as advanced as her imagination;
- it seemed to them that young children tend to get writing inspiration from looking at a picture, whereas older children do the writing first and then illustrate it;
- they saw that children could read much earlier and better than they could write.

Within three months of getting *STOS*, Richard and Jayne had produced *Let's Spell;* it took another six months to get it up to a high enough standard to release it.

After this came *Magic Story Book*, which was "finished" by the end of 1989. It then took another year to get it "error-trapped and bug-free," according to Richard. It's taken since then to try it out with children – mainly Rebecca, their daughter, but also in a few schools.

Along the way it was examined, and amended, first by Database software publishers. Since then, Soft Stuff became interested and got HTV involved through Rolf Harris's Cartoon Club. This popular TV program has children working with a variety of media to produce cartoons. It's a great feather in Atari's cap – as well as *Magic Story Book's* – that Rolf and a few others were playing with the package for an hour and a half!

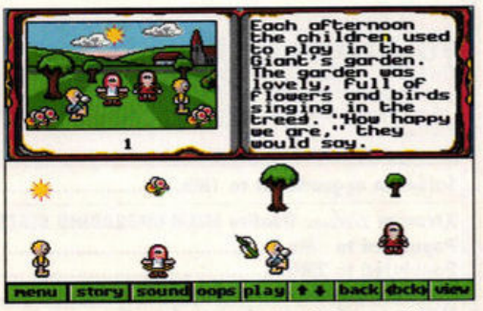
In the light of all this, you'd be forgiven for thinking that the package was written in a purpose-built workshop with all the mod cons you can think of. In fact, it was done in a spare room with a 1MByte ST and an external disk drive – not even a hard drive! – and, not too long ago, Richard was working with a colour telly until, fed up with his eyes dropping out, he decided to invest in a colour monitor. (Well, he is a doctor and Jayne's an optician.)

At the moment, you can't put your own words into the word list banks. This is going to change with a proposed add-on, which will be good news for teachers and parents. Also, the Dunns are interested in generating support for the package in the Public Domain. To achieve this, they hope to set up a *Magic Story Book* Users' Club, to encourage members to send in their own stories, which can then be converted to *Story Book* format. These could then be distributed through PD libraries as licenceware. The Dunns will also be writing more stories themselves. Membership of the Users' Club will also get you a newsletter every four months (probably), in which ideas can be exchanged. That's the intention, anyway...

● *Magic Story Book* is so simple to use that a six year old can master it. Here, that six year old and her father attempt to explain it to some bearded character who keeps asking for a house-painting brush...

● Hang on! This is *our* solar system, isn't it? Luckily, you can just click on "Oops" and then on the second sun to correct the mistake.

● With a few trees sprinkled on for good measure, the background is completed. If you prefer, you can import one you've drawn in a *Degas* or NEO format.



● Finally,put some children in the picture, and the illustration for page 1 is finished! Click on "play" and the whole scene comes to life!

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3D Graphics Programming	Abacus 18.45
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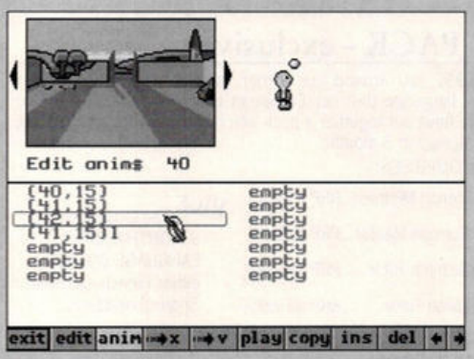
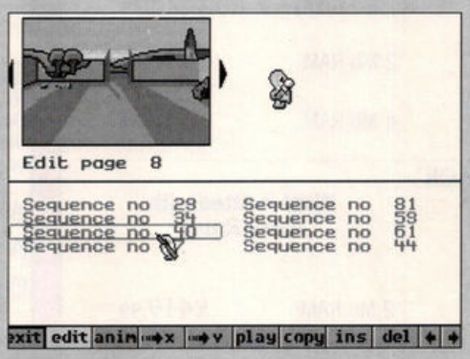
PLEASE STEP THIS WAY – OR HOW ABOUT THE OTHER WAY?

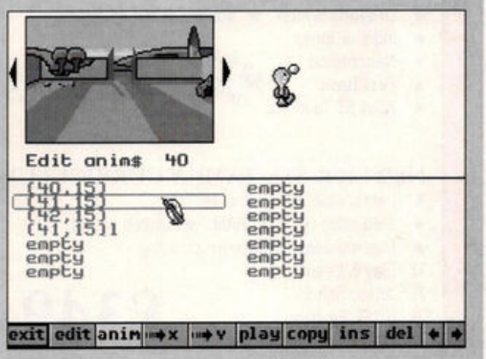
***Magic Story Book* gives you the option of customising animation sequences. The range of features is not as extensive as that in dedicated packages like *Animaster* (see page 118) and editing sprite movement is not for beginners, but if you enjoy LOGO-type programming it's good fun.**



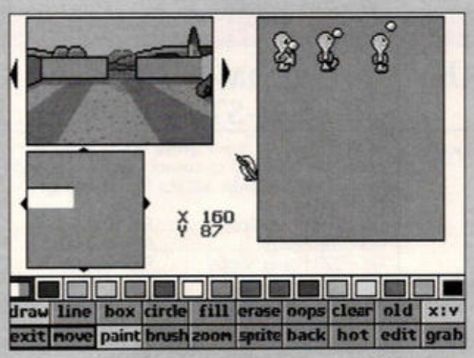
● To construct an animation sequence, you first select the sprites you want to include. Here you have selected numbers 40 to 42 from the supplied bank of sprites and the first is displayed.



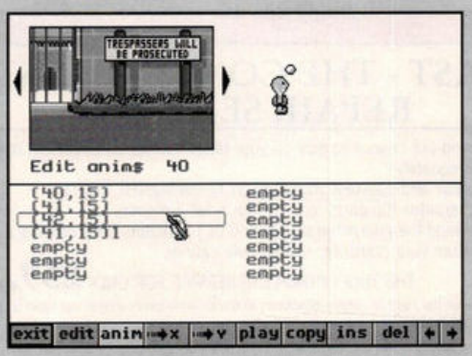
● The next step is to go to the movement editor using the keys along the bottom of the screen and select the pre-defined sequence supplied for sprite number 40.



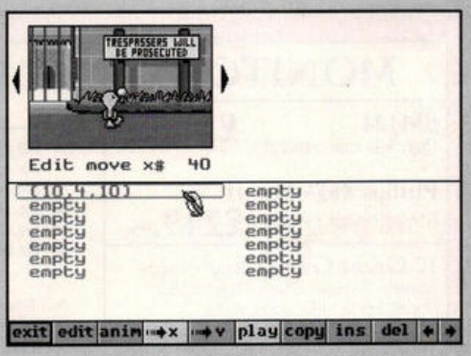
● Having created a sequence like this, you can change the timings if you feel like it – the second number is the time it takes, in fiftieths of a second, to complete the movement.



● You can not only test out the animation itself, but also what it looks like on a different background. Of course you can edit the existing background, as detailed on pages 110 and 111.



● If the pre-defined animation isn't quite what you want, you can edit the horizontal (x-axis) movement of the boy bouncing the ball, and even animate the ball separately if you want to.



● This may look like gobbledegook, but it's only saying, "Every ten fiftieths of a second, move the boy by four pixels, and do this ten times." You can do exactly the same with the vertical coordinates.

certain to appeal to the creative child, and will help develop any creativity that's there. But what if you're just not that sort of person to start with? You can lead a horse to water, as they say, but you can't make it draw – so don't expect this package to work miracles, despite its title!

It has to be said that there are other packages which implement individual parts of this package much better than *Magic Story Book*. For example, if you want to create good animated pictures – and in 3D – go for *3D Construction Kit* (£49.99 Domark ☎ 081 780 2222). If painting's your thing, buy *Deluxe Paint 3* (£45.99 Electronic Arts ☎ 0927 473556). For programming and sprite editing, try *STOS*, the package *Story Book* itself was written with – it costs just under 50 quid if you take advantage of *FORMAT's* special offer on page 118. And story writing? Any word processor can do it better than *Story Book*.

Where *Story Book* really scores is that it's got virtually all of these facilities in one package, integrates them all in a very innovative way and, of course, enables you to do it all without breaking the bank. On balance, this is definitely worth buying, if only because there are so many levels and so many aspects in it that there isn't really an upper age limit. The program will grow and develop as your child does – something which is a bit of a rarity these days. ***stf***

PRESENTATION	9
EASE OF USE	7
LONG-TERM INTEREST	9
VALUE FOR MONEY	9
EDUCATIONAL VALUE	7
OVERALL	**87%**

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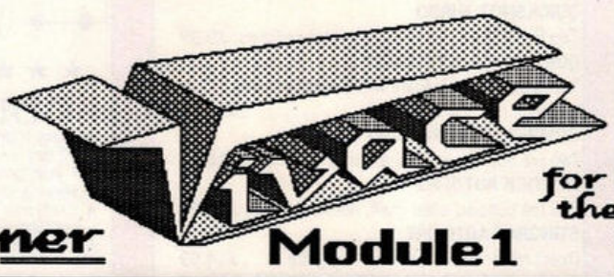

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TIPS

And for my next impressionist

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● ***Paintworks* is £29.99 from Activision**
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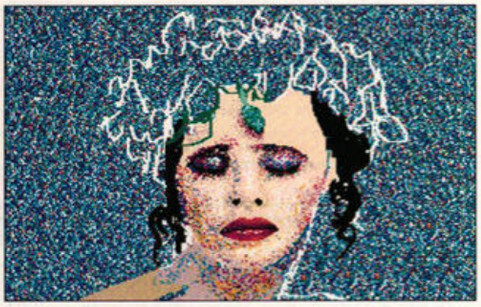
❶ "The first thing I did was set up the colour palette. I spent some time on this because I wanted a rich looking picture. After selecting the Repeat-On function and setting the shading density to the lightest, I used a filled box over the whole picture. This sprays the current foreground colours over the screen. Once the background was completed I used freehand drawing to draw a rough outline of the face.

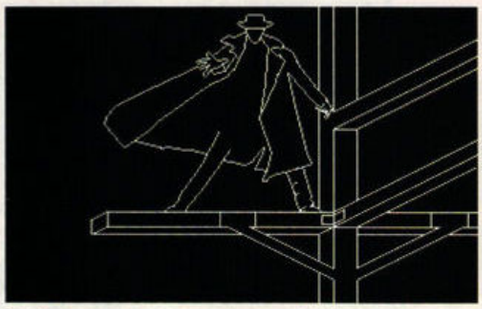


❷ "Using a round brush, I put down the basic flesh colour and filled in with black roughly where the hair was going. The next step was to use Zoom to render the eyes, lips and nose and build up the shading around the face. The idea of using such diverse colours was to achieve a more interesting shading effect and give a strong image.

Darkman lives again

Chris McKinley is mainly into adventure games, he says, but in the last few months has turned his talents to graphics on his ST. He says he's lost count of the hours he spent working on *Darkman*. He's used *Neochrome Master*, a version of the famous no-longer-Public-Domain art package. (See News, page 7!)

● ***Neochrome Master* is probably still a Public Domain program. For *STF's* comprehensive directory of PD libraries, turn to page 50.**



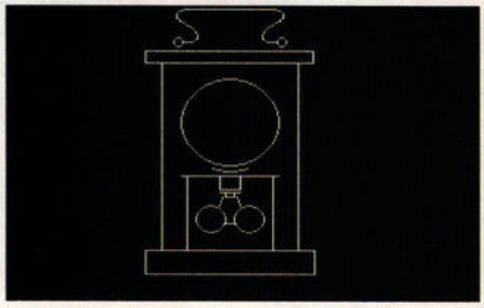
❶ "In this first stage, I started with the outline of the structure that the character would be standing on, using the Draw Line option and making sure I got the perspective right. Next, I drew the outline of the man using Freehand and Line Draw. At this stage it's not important to be completely accurate because when you come to shade in the picture you can retouch any mistakes.

❷ "Next, I coloured in the character and the scaffolding. To give a feeling of darkness to the whole scene, I only shaded parts that caught the light. I also drew in the man's face and hat.

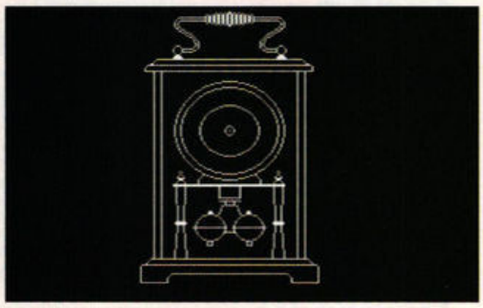
Clock this clock

A carriage clock in the living room of **John Austin** from **Warley** provided the challenge of drawing metallic objects. John says he chose *Deluxe Paint* because of its easy-to-use mirror function and bezier curve tools. It also enables you to take advantage of the 4,096 colours available on the STE.
Take it away, John!

● ***Deluxe Paint* is £49.99 from Electronic Arts**
☎ 0753 549442



❶ "After positioning the subject in the centre of the screen, I set about drawing a rough outline using the circle and box tools. I then set the mirror tool at the centre of the clock face. I used the bezier curve tool to draw the basic handle shape – this took several attempts to get it to look right.



❷ "Still using the mirror tool switched on, I added more detail to the pillars, the handle and the frame of the clock. I use the mirror tool because of the time it saves when you're drawing symmetrical objects.

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LAKE STREAMLINED PICTURE SHOW

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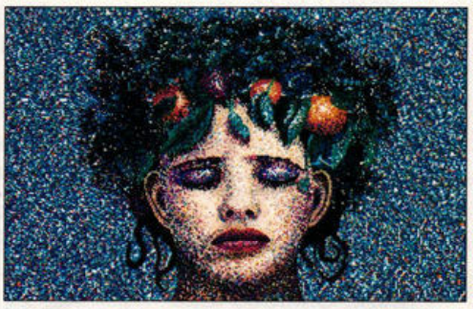
❸ "Here I started work on the foliage on the head. I used Freehand Brush in conjunction with a light shade density to produce an airbrush effect. I used greens, blues and black, with white for the highlights. I also started to render the fruit and leaves. For this I used Zoom mode to give me greater control over detail.

❹ "By now the head is really taking shape. Using block copy, I took in the chin and moved the neck to the left. Then I began to fine-tune the face using Airbrush and Zoom again. I started to build up the ears, just getting the basic shape to start with.

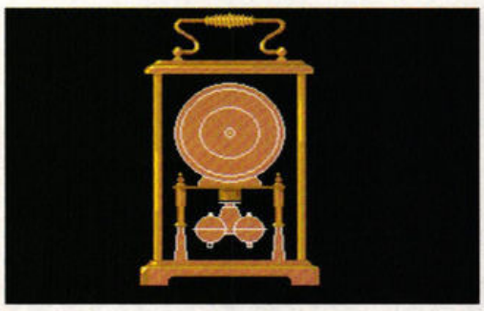


❺ "The final image. Working in Zoom mode, I finished off the ears and generally touched up the face, coming back to it repeatedly and altering bits and pieces until I had something I was happy with."

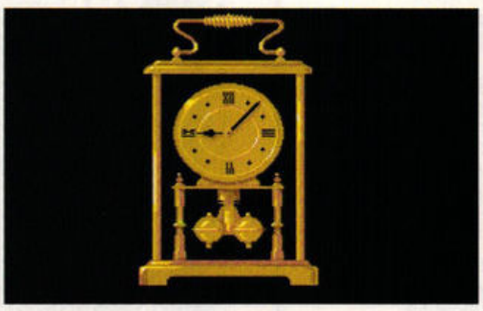
❸ "The parts left white up until now were coloured in with different shades of orange to give the feeling of heat coming from the flames. I drew in the man's arm and the flames using nine shades of orange and red to get the flames looking as real as possible.

❹ "This part was difficult – the flames took ages to do. I speeded up the process by copying blocks from sections I had already done and rotating them before pasting them down again. I had to do lots of close work using the Magnify option to get the flames to fit the picture properly. There is no avoiding this process; it's surprising how even the smallest group of pixels out of place can spoil the picture.

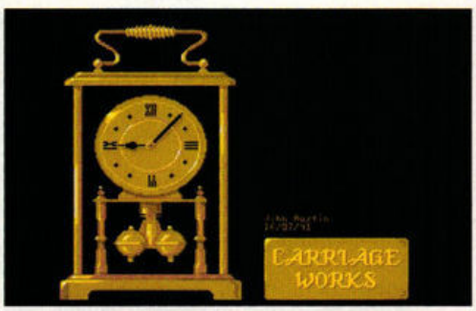
❺ "The final stage, with just a few details added. I drew a few buildings in the background and added the Darkman logo to finish the picture."



❸ "Now I decided to select a colour spread ranging from a dark brown to a bright yellow. Then I filled in all the clock parts with one shade of medium brown. Then came the difficult part of starting the shading of the picture. I used the zoom box to cut down on the eye strain!



❹ "I found the best results were obtained by using the bright yellow first and then the darker shades either side of this. After completing the shading, I used a near-white colour to touch up the various highlights. Then I detailed the clock face. The only problem I found was that some of the Roman numerals were too distorted, so I replaced them with dots.



❺ "Using a separate buffer, I designed the title plaque. Using the brush tool, I repositioned the clock and combined the picture and the plaque, adding my name and the date."

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Fractal music

As this issue's Cover Disk programs and special cover feature demonstrate, fractal mathematics can be used to generate absorbing graphic images on your ST, made up of complex patterns of repetition and structuring – so why not do the same for music? Jon Bates reviews two pioneering fractal music programs which could change the way music is created in the future

If everything in life was totally predictable, you'd die of boredom. Too much disorder results in confusion and instability, but a certain amount of chaos is positively healthy. Music is a prime example of this. The monotonous predictability of many chart records probably explains why scorn and derision are poured on them; surprise and variety in melody and rhythm are exactly what make music, of all types, appealing.

For a couple of decades, there has been serious mathematical study of the nature of chaos. As our special feature this issue explains (see page 34), that study is an attempt to find patterns in what is apparently chaos – whether it be the spread of contagious diseases or the structure of a snowflake. So successful has this been that with the aid of an ST the process can be reversed: instead of analysing, you can create ordered patterns uncannily similar to these chaotic natural forms. The term for this has become something of a buzzword – Fractal Maths.

The most often seen application of fractals is the generation of graphic images, and we've put quite a few of these on our Cover Disks of late – for example, this month's *Mountain* (see Cover Disk pages, beginning page 16) and last month's *Fractal Snowflake*. (If you missed that, turn to page 130 for information on ordering back issues.) Fractal art has been around for some time, but how about fractal music? Why not convert the results of fractal calculations into musical notes? The ST, with its built-in MIDI ports, is the ideal engine to generate new and interesting music. And it isn't just dull and mechanical stuff that you sit back and watch – you set the limitations and make decisions about how the music sounds and is transformed.

There are two programs out at present that create fractal music on the ST. Both were written by musicians who are fractal enthusiasts and both work with MIDI instruments only. They have slightly different approaches but essentially they both generate notes according to fractal equations, under limitations you impose. The fractal side of things adds a certain "randomness" to the music – affecting rhythm, pitch and velocity (the attack or volume of each note). If you leave things very open with few limitations imposed on what the software can come up with, the results can be pretty freaky and certainly border on chaotic.

The fractal side of things adds a certain "randomness" to the music. If you leave things open with few limitations the results can be pretty freaky

If you're looking at fractal music as a way of generating simple pop tunes, then you're likely to be disappointed. The process generates cycles of patterns that are never quite the same. The music moves forward by gradually shifting and changing the patterns – perhaps a slightly out-of-tune "Tubular Bells" or Jean-Michel Jarre could be one way of describing it. The fascination is that it is actually creating things under your control and sometimes the results are amazing.

Of course it is essential that you can retain what has been created, and both programs can save their results either as a file that can be loaded back into the program or as a standard MIDI file. A MIDI file is to a sequencer what an ASCII file is to a word processor – a standard format that enables data to be transferred between different pieces of software.

Take the music patterns created by the fractal programs, load them into a dedicated sequencer and you can manipulate the patterns and edit them to fit whatever context you like. You might, for instance, take small sections and insert them into conventional compositions. These aren't really "composition" programs and don't claim to be – they're more akin to tools that generate fascinating snippets of music that can then be tailored to your requirements.

Fractal Music Composer

MACHINE: ALL STs
PRICE: £TBA
FROM: FRACTAL MUSIC LTD
CONTACT: PO BOX 1938, LONDON N8 7DZ

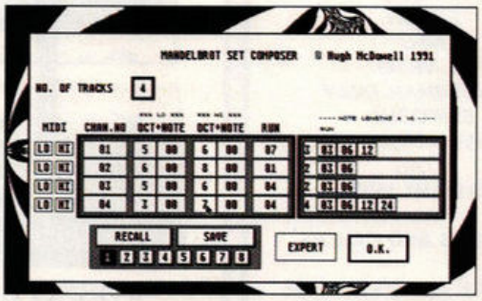
This was developed and programmed by Electric Light Orchestra cellist Hugh McDowell, a veteran ST musician. ELO have not used his program for any of their recordings so far, but that's not to say it won't be making an appearance in the future.

It divides into two similar programs, one using the Mandelbrot equation and the other using the Julia set. Both are capable of running up to four MIDI channels simultaneously and can save all the music as MIDI files. Usefully included on the disk is a *PlayMIDI* program that acts as a stand-alone MIDI File player.

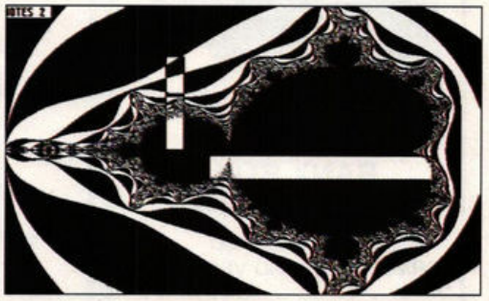
The Mandelbrot program uses a command structure of "pages" of information. The first enables you to set the MIDI channel, octave and note range. A series consisting of up to six different note lengths is set, plus the number of times each note length can be repeated. You then set an overall "run" for the number of times the set is repeated. A second page imposes a tone map on top of this, forcing it to conform to particular scales or chords – Major, Dominant, Minor, Diminished, Whole Tone and Chromatic. The number of beats each chord can be held for is set in a chain of boxes. A third page displays the Mandelbrot set as a picture and you can draw boxes to select areas that seem interesting to you. Each track has two boxes, one for the note pitch and the second for duration.

The Julia program is slightly less complex in that the initial setup just asks for the smallest allowable note and a subsequent page sets the duration map – the number of times a note value can be repeated before the next part of the program. Again the final page has a fractal image in which you can click, this time on points within the pattern that you find interesting. Each point is for one of the four tracks: as the tracks play or fractise, four patterns are produced which are the graphic equivalent of the music.

There is a direct relationship between the graphics on screen and the actual music produced. *Fractal* →



● **The Mandelbrot display of *Fractal Music Composer*. This first page sets up the four tracks you intend to use, defines the MIDI pitch areas and sets the number of times each track loops around the final note values. You can set these up in the right hand window on the screen.**



● **Once you have defined the scales and chords, the interesting part begins. The inverted areas of this graphic image are going to be used as a basis for created both pitches and note durations for each track – at the moment only Track 1 is set. The program is taking the graphics and turning them into music.**

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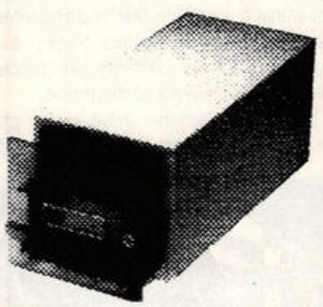

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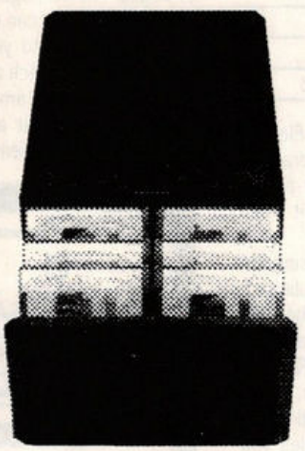

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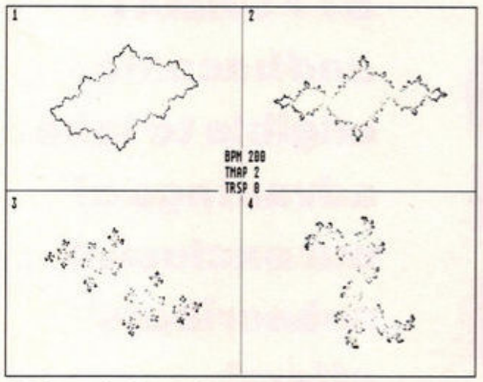
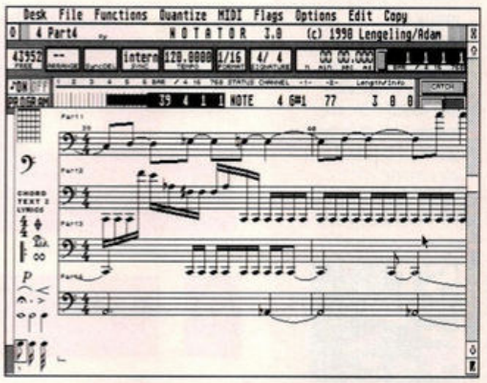
Music Composer also imposes quite musical limits on the underlying "chaos" and makes it quite easy to produce very acceptable results in a short space of time.

If you're a musician however, you might have been much happier if the note values had been in terms which you could relate to – crotchet, quaver, semi-quaver and the like, or quarter-note, eighth-note and so on – rather than a set of numbers you have to keep on looking up every time you want to do even the simplest operation.

It would have been a good idea to enable you to name all the individual tracks as well. But both sub-programs have the ability to store up to eight sets of screen settings for each page and call them in from memory rather than from disk, which saves you quite a bit of time when you are trying new ideas out. You can also "cue" to hear the upper and lower notes of the MIDI channels you are setting up.



● **Using a similar set of screens, the Julia program also uses a very visual approach. This time the four squares on-screen represent the four tracks playing, and as they play the image is drawn before your eyes.**



● **This is part of the music created by *Fractal Music Composer's* Julia sub-program. Notice how there are plenty of repeated notes as well as melody lines – this gives the music a flowing quality.**

FRACTAL MUSIC COMPOSER

£TBA (likely to be under £65)
Fractal Music Ltd, PO Box 1938, London N8 7DZ

FEATURES: 75%
Needs a few things tidied up

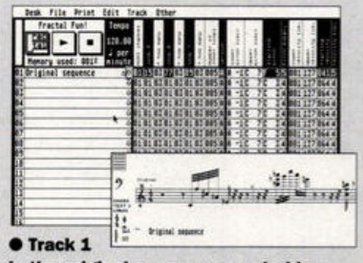
SPEED: 80%

EASE OF USE: 90%

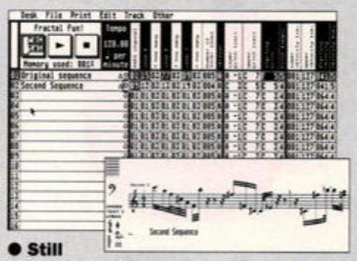
RESULTS: 94%
Very musical and visual. Has its own built-in charm

***STF* RATING: 88%**
Although the price is not confirmed, this will probably cost less than *Fractal Music*. It is not as powerful, but is less technical and therefore easier for the musician – rather than the mathematician – to use

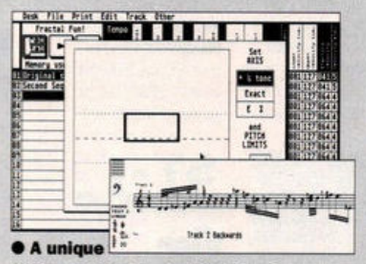
CHAOS NEVER SOUNDED SO BEAUTIFUL



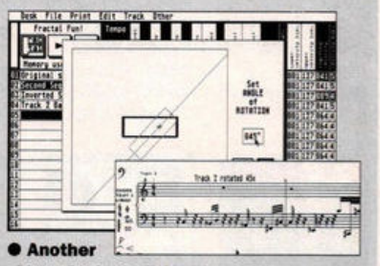
● **Track 1 is the original sequence created by *Fractal Music*. The parameters to the right tell it how many times it "loops" on various aspects of pitch, duration and velocity. Subsequent columns limit the pitch range and velocity but can also expand it if you wish.**



● **Still keeping the first sequence, a different second sequence was then created on Track 2. If you look at the columns to the right of the screen you see that the loop numbers have been changed so that they now produce a completely different pattern.**



● **A unique feature, this. Track 1 is being turned upside down – if a note was six semi-tones above middle C it is now six semi-tones below middle C. The outlined box represents the sequence's pitch area, based on the dotted line which equals middle C.**



● **Another clever feature: data relevant to pitch, duration and velocity is turned through 45 degrees. Thus data from one parameter is exchanged with another. The result is completely unexpected. You could apply this on its own to music you've loaded in.**

Fractal Music

www.stformat.com

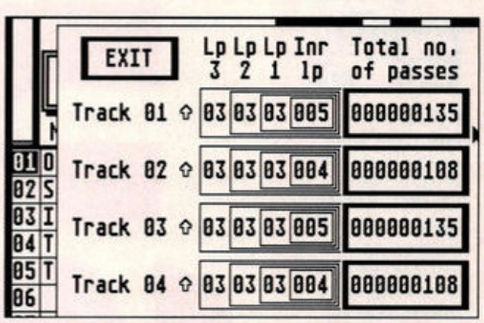
MACHINE: ALL STs
PRICE: £65.00 (DEMO DISK £5)
FROM: DATA MUSIC LTD
CONTACT: 4 SHARON COURT, ALEXANDRA GROVE, LONDON N12 8NX

Developed and co-written by avant-garde composer Chris Sansome, this package doesn't have the graphic presentation of *Fractal Music Composer* but it is nevertheless a very comprehensive program with far more features. It can work on 16 tracks simultaneously, and once you have sussed out the how to set up the tracks it is fairly straightforward. Each track can set to loop in three ways, roughly corresponding to time, velocity and pitch, and limitations can be imposed on the pitch and velocity.

You can quantise (round up) the notes you generate and you can stretch or restrict the pitch and velocity range. Transposition of any track is also possible and the entire track can be moved backwards or forwards in time, presumably so that you can hear its effect as it interacts with tracks already recorded. You can also reverse and invert any track, and even rotate it. This starts swapping the values of pitch, duration and velocity about, so that the values you have applied to one field can now start being applied to another. You keep a copy of the original track and, as with all alterations to the tracks, you store the new version onto a fresh track.

Generally this is a very well thought out program with many neat features – and if you don't have a sequencer capable of supporting MIDI files then it is a little more self-sufficient. It also runs on far more tracks and has far more facilities. However, *Fractal Music Generator*, despite its relative drawbacks, is probably the easier for musicians to get to grips with, providing they have access to a sequencer as well for editing. *Fractal Music* is likely to find favour with the more mathematical and computer-based enthusiasts.

A future extension of these programs could be a package that draws complete fractal images and also creates music at the same time – the possibilities are as limitless and as varied as the compelling patterns of fractals themselves. ***stf***



● **In case you're wondering how many calculations and loops have taken place, this shows you. Here Track 1 has three pitch loops x three durations x three velocity. The final figure 5 is the number of times the whole process is repeated. 3 x 3 x 3 x 5 = 135.**

FRACTAL MUSIC

£65 (Demo disk £5)
Data Music Ltd, 4 Sharon Court, Alexandra Grove, London N12 8NX

FEATURES: 90%
A vast array of manipulative tools

SPEED: 90%

EASE OF USE: 83%
Almost too many ways to execute every action

RESULTS: 85%
Interesting and often very surprising

***STF* RATING: 86%**
A very innovative approach to creating novel sections of music. The documentation is excellent – but then it needs to be, considering the overwhelming range of features and control methods

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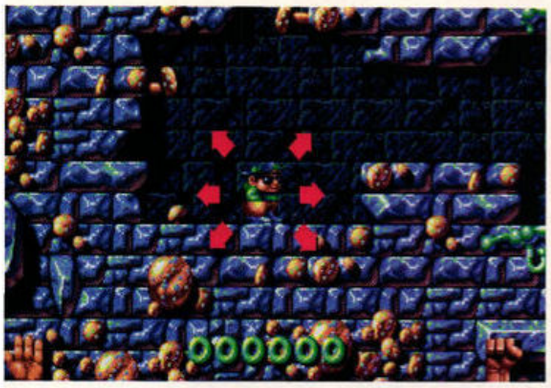

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Spellbound!

ST FORMAT's education specialist Terry Freedman looks at several packages to help a wide age and ability range of children learn how to spell and have fun too

Even in this day and age, being good at spelling should mean more than being able to run a spelling checker in a word processing program! We've been looking at a few programs designed to help with spelling.

Although a number of different approaches have been taken, a common element in most of the software packages reviewed here is that they have not adhered to any generally accepted methods of teaching spelling. This means that it's important to consider whether the software enables you to put your own word lists in. This is also useful, of course, for helping to raise the difficulty level of the tests or games as the child improves.

Another important thing you need to think about is whether to go for a generalised package like *Fun School 3* (reviewed in *STF* 15 – see page 130 to order back issues) or a specific one, like *Henrietta's Book of Spells*. But some of the software here can be used with a very wide age range indeed.

Henrietta's Book of Spells

AGE RANGE: 7-14+
MACHINE: ALL COLOUR STs
PRICE: £24.99
FROM: SCETLANDER
CONTACT: 041 357 1659

ST FORMAT GOLD AWARD

This is a very well put together package. The documentation is presented in a way which encourages you to read it and it is designed to be easy to understand.

The package consists of five word puzzles you have to complete. Each time you finish one of them you "discover" a letter, and once you have all five letters you can find the magic word which turns the frog into a prince.

The puzzles themselves are actually very engrossing. *Flash* flashes a word on the screen, and your task is to repeat it. *Complete* has you trying to fill in the blank letters to complete words on the screen. In *Crack-It*, you're given a code and you then have to decipher a nonsense word using that code. *Hang-Up* is hangman, and *Jumbles* is – guess! Whenever you successfully complete a section, Henrietta does a sort of Highland Fling.

As it stands, the program is "colourful" enough to keep a child interested for a long time. Even so, the teacher or parent can keep this interest alive by changing several elements. For example, you can select one of three levels of difficulty, set which of the sections in the contents list are attempted, and determine the length of the words used. Usefully, the word lists can also be edited themselves. This is important because, as far as you can tell, no spelling rules seem to be adhered to. Being able to edit the word lists means that you can, if you like, concentrate on particular sounds to help the child recognise certain letter combinations.

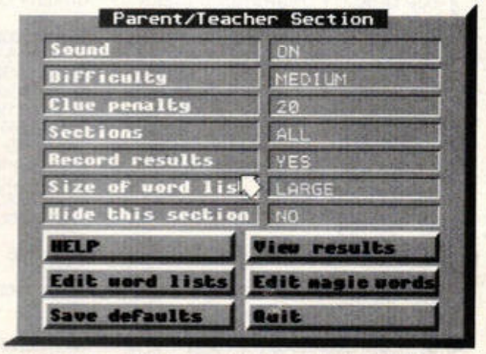
You can also choose whether the results are recorded, and if they are you can then print them out. The results sheets are very extensive. They tell you which words were attempted in which section, and how many goes the child had. This can help you identify any pattern of learning difficulty (if any).

There are one or two niggles. The Quick Start guide is misleading because it tells you to look at the Readme file on the disk – a bit of a problem because the program boots itself up when you switch on. This could throw anyone who is not completely at home with the ST. Next, whoever chose the colour scheme of the start-up screen must have either very good eyesight or an excellent colour monitor! We had to fiddle around for ten minutes before it was clear enough to read. This isn't just a matter of personal preference – you need to be able to read the start-up screen to actually start the program, because you have to type in a codeword from the manual.

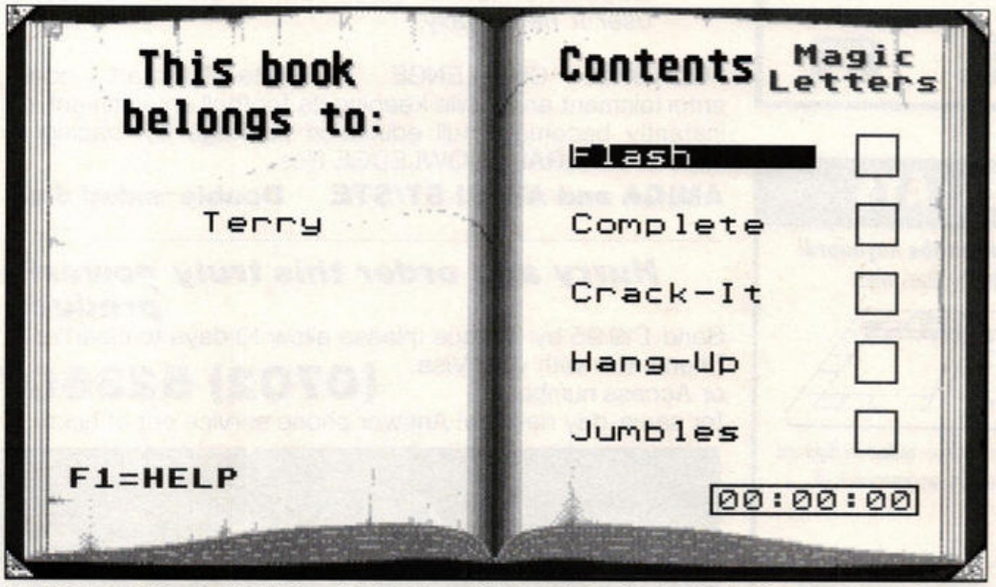
However, these are relatively minor quibbles. This program may not be the most direct way of helping children learn how to spell, but it's certainly one of the most entertaining ways you'll come across. Perhaps even more importantly, it engenders a love of words and stimulates curiosity, as well as encouraging the development of problem-solving skills. With a bit of sensitive help from an adult – the reading age of the instructions is too high for the lower part of the age range – this package can make learning how to spell not only fun but exciting as well.

Contents: one double-sided disk; Quick Start Guide; 12 page manual; badge. Boxed.

● **The fun starts straight away when you encounter the incredibly ugly wicked witch and a rather cute-looking frog who (surprise!) used to be a prince.**



● **You can easily tell how much work the child has done – or not done, as the case may be! Print-outs conveniently enable you to chart progress.**



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LQ1000/1050	2478DN	3.70	2.90
LQ2500	2795DN	4.05	3.20
LQ2550	2877DN	4.05	3.20
NEC P2200 (+)	2844FN	3.30	2.60
Olivetti DM1/200	2843FN	3.65	3.25
Olivetti DM105	2863FN	4.75	4.35
Panasonic KXP110	2228FN	2.95	2.35
KXP1124, KXP1081	2904FN		
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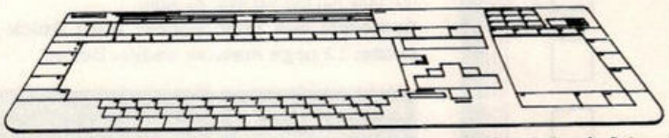

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TALKING BIRDS

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● **Visually this is quite jolly at first – but there's not really enough here to keep you going for long.**

Kidzone

AGE RANGE: 3-10
MACHINE: ALL COLOUR STs
PRICE: £3.95
FROM: MTS (UK)
CONTACT: 0983 756056

This is a Public Domain offering, and it's quite an ambitious one at that. The disk actually contains a number of programs, only one of which is concerned with spelling – the others are about telling the time, identifying shapes, colour recognition and grid work, as well as arithmetic.

The spelling program is called *Gone Fishing*, and it features a rabbit who's fishing for pictures. You're given the name of the object which is shown on each picture, apart from the first letter which you have to type in. A correct answer earns you a happy sort of sound, but if you've made a mistake you get a raspberry blown at you.

Although the program is colourful to look at, there isn't enough in it to maintain long-term interest. You can't put your own word list in, and you're not given the chance to correct your mistakes – except by going through the whole test again. It is still worth getting the disk for the grid work section, but if it's only spelling you're interested in there are better programs around.

Contents: one single-sided disk.

PRESENTATION	7
EASE OF USE	7
LONG-TERM INTEREST	4
VALUE FOR MONEY	5
EDUCATIONAL VALUE	5
OVERALL	**62%**

Moon Letters

AGE RANGE: UNDER 5s
MACHINE: ALL COLOUR STs
PRICE: £3.95
FROM: SHOESTRING SOFTWARE
CONTACT: 0792 649060

One of the better PD (or actually, licenceware) programs for the slightly older age range, this is available from several PD libraries (see page 50 for *FORMAT's* directory). It's really a shoot-'em-up in which the "aliens" are letters. There are four word banks and six levels of difficulty, from Practice to Genius.

The idea of the game is that a word is given to you and you then use the mouse to shoot the letters that make up the word as they appear on the screen. At the most basic level, the word remains on the screen all the time. As you increase the difficulty level, you first of all have to remember what the word was; further on you're shown letters which do *not* form part of the word, and if you shoot them you're penalised. The game gets more and more frenetic as the time limit is reduced at higher levels. This game has a high instant appeal but, despite its difficulty levels, gets a bit boring after a while – especially the "music."

● **Am I learning how to spell, or how to zap aliens? It doesn't matter really – it's all good clean fun!**

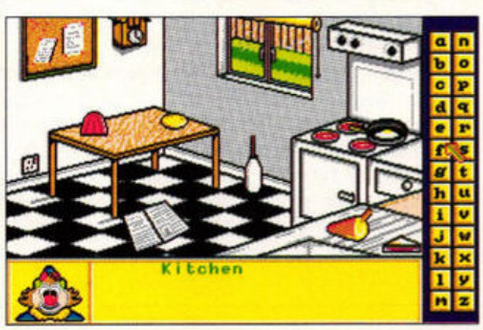
Another problem is that it tests a number of things besides spelling, such as short term memory and, probably, how much fluff has got into your mouse to prevent it moving quickly enough. There are a couple of ways in which the program could be improved. At the start, the instructions appear on the screen automatically. This is a good idea, but they scroll up too fast for comfort.

Another niggle is that, because the disk is autobooting, the newcomer to the ST might find it hard to locate the *Editor* program, which is a pity because it's the *Editor* program that gives it the edge over many other programs, including commercial ones.

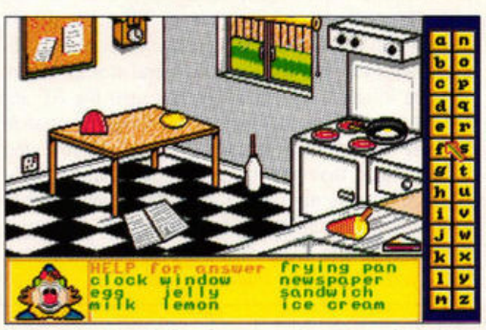
You can have four word banks with up to 68 words in each, which means that this enables you to use the program to test the words and word patterns that you think are the most important at the moment. For this reason, it is worth buying this program, but preferably as a supplement to one of the others mentioned on these pages.

Contents: one single-sided disk.

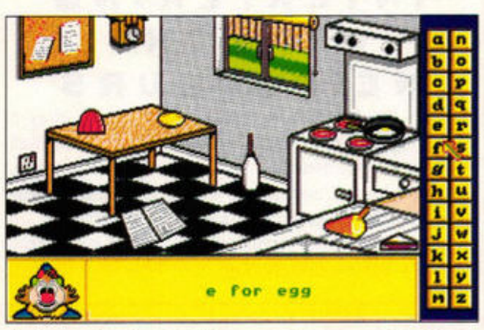
PRESENTATION	5
EASE OF USE	5
LONG-TERM INTEREST	7
VALUE FOR MONEY	8
EDUCATIONAL VALUE	6
OVERALL	**67%**



● **One of 12 very colourful rooms in *First Letters*, each containing ten objects which potentially move.**



● **Pressing the <Help> key once gives you a list of all the objects, useful for identification purposes ...**



And pressing it again gives you the answer if you're still having problems working out what it is.

First Letters

AGE RANGE: UNDER 5s
MACHINE: ALL COLOUR STs
PRICE: £7.99
FROM: RAINBOW EDUCATIONAL SOFTWARE
CONTACT: 0392 77369

Now here's a program which is well thought out, comes with reasonable, if brief, documentation and costs little more than PD software. The idea is that you're shown a scene, such as a dining room or a kitchen, which has ten objects in it. When one of the objects starts to move, you have to type the first letter of its name.

One of the biggest problems you encounter is just seeing which object is moving (see the screenshots above), and then actually identifying it. In a game like this, context is important too. For example, you mightn't expect to find a zebra in the dining room – but you do! Still, help is available at the press of a button, and your mistakes are then corrected.

It's worth buying this, although you would need an extra package to supplement it. Better still, be prepared to spend some time away from the ST helping the child to follow up some of the suggestions are included in the documentation. ***stf***

Contents: one double-sided disk; manual (a double-sided sheet). Boxed.

PRESENTATION	7
EDUCATIONAL VALUE	7
EASE OF USE	7
LONG-TERM INTEREST	5
VALUE FOR MONEY	6
OVERALL	**67%**

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Desktop TIPS

This month Neil Jackson, *FORMAT's* answer to Heath Robinson, looks at memory, TV interference and rifles through his own trashcan (Yecccch!). Get your gloves on and join him

RAM-RAIDERS TURN TO TRASH

Some of the more sophisticated alternative desktops like *Neodesk 3* and *Harlekin* are supplied with recoverable trashcans. This means that if you delete something, you can retrieve it from the can – providing you do so before you reset.

Here's a tip from **Richard Bradshaw** in **Wells** that gives you a recoverable trashcan on an STE. You need a copy of Intercept RAMdisk (INTRAM) which appeared on Cover Disk 19 (see page 130 if you missed it).

Copy INTRAM to the root directory of your boot disk and reboot. Then select INTRAM from the Desk menu. Install a RAMdrive as drive D, allowing about 100K space for it, and then reset your machine.

When it's re-booted, use the Options/Install Disk Drive menu to create a Drive D icon. Save the desktop when you've done this. Double-click on drive D to make sure that the RAMdisk is actually working.

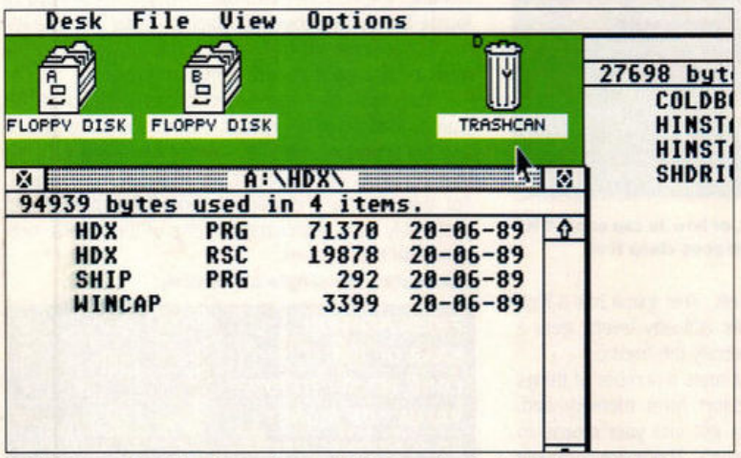
Then load up your new DESKTOP.INF file into a word processor which can save files in ASCII (*ST Writer Elite* can do this; see Cover Disk 27). Search through the lines of code and delete the line

```
#M 00 02 02 02 FF TRASH @ @
Next, find the line which begins
#M 00 00 00 FF D...
```

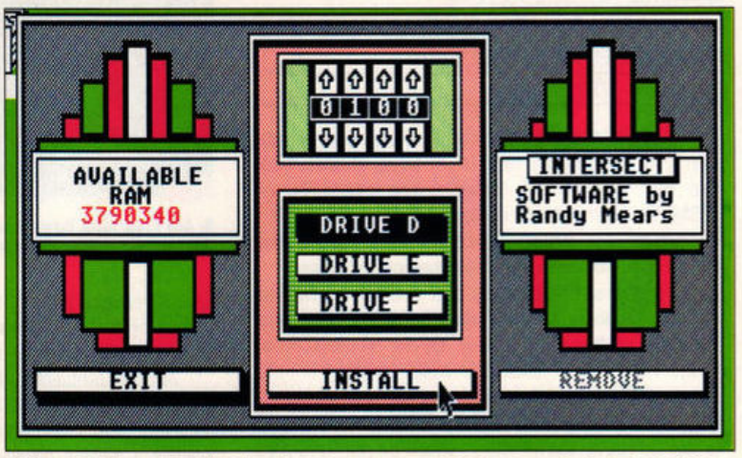
and change the byte before `FF` to `02`. This selects the trashcan icon for Desktop display. You can also change the D FLOPPY DRIVE bit to TRASH to make a more obvious display.

Save the modified file in ASCII as DESKTOP.INF to overwrite the old one. Then reset your ST and wait for the new Desktop to appear.

You now have a strange hybrid icon – a D with a dustbin. To delete files with it, just hold down <Control> when selecting their icons and drag them to the new bin. Holding <Control> makes the STE move the files (deleting the originals) into the RAMdisk – where they remain until you reset.



● **Modify your Desktop file and have INTRAM running in the background and you get this display. The trash is still called D, to remind you it's still a RAMdisk.**



● **Use the Intercept RAM drive to make a recoverable trashcan. Install a RAMdisk of about 100K, so you can "delete" large files. They'll stay there until you reset.**

INTERFERING WITH THE NEIGHBOURS

Imagine: it's a late night, and you're plugging away at your ST quietly and "them next-door" bang on the wall. Why? You're not making a noise, and there's no reason for them to get annoyed. Perhaps, like **Bob Taylor** from **Manchester,** you're causing TV interference.

Bob's ST has a strange effect on the goggle-box when the video's switched on, too. Whenever the kids are watching their favourite video-nasty Bob's ST distorts the pictures and sound even replacing the TV picture with the ST's screen display on occasions. His family want to know what causes it and how to cure it.

The interference is caused because the ST and most home videos share a common UHF TV channel for their output. Why? It's one of those industry standard thingies that no-one ever thought out properly. Channel 34 was earmarked as a "home video" channel by most manufacturers before things like computers were all the rage. When the computers came, there was no allotted channel for them, so manufacturers used the video channel rather than any one of a thousand broadcast channels, so they didn't interfere with TV stations (just videos!)

To get round it, have a poke around at the back of your video – you should find a small screw-head with some clockface markings around it. Twiddle this to re-tune the video to another UHF channel and then re-tune the TV set's own video channel to pick this up. (You did it when you first got the video.) Experiment until you've found a channel that doesn't interfere with any of the direct TV channels and then turn on the ST. You should find that the interference has gone.

TEN TOP DESKTOP TIPS

1. Having trouble getting *Harlekin 2* to dial out on your modem? The correct command sequence to talk to a modem is AT DT followed by the phone number for tone-dialling, or AT DP number for pulse-dialling.
2. Did you wipe your Cover Disk 26 with the *Loud Formatter?* Whoops! It is a formatter, after all. What did you expect? If you can't get a copy off your mate, send them to the usual address on our Cover Disk pages, page 16 and we'll send you another.
3. Be gentle with your ST. Some models can suffer keyboard blackouts after a tough life. This is due to cracks in the keyboard circuit board caused by a post underneath.
4. If you're upgrading your ST to more than 1MByte, save yourself some time. Check the MMU chip before you buy. If it has the number C0100109 on top, it can only address 1MByte of RAM. Frontier Software (☎ 0423 67140) can supply the correct chip, C025912, for £25.
5. Don't go outside before checking that you've got dressed. (Ed seemed to think this was important.)
6. For a tidy display in *GFA Basic* version 3, use <Control> and <Help> together to close down procedures which you've previously opened.
7. If you own a Gasteiner Mega Drive, you can select the drive to boot from, the AUTO programs to run and the accessories to load, just by holding down the two <Shift> keys while the drive checks its partitions.
8. If you log onto a bulletin board and find the screen fills with repeated characters, you're in an ANSI-graphics BBS. Use *Miniterm* to decipher the display codes and give colour menus. *Miniterm* is PD, available on Bath BBS (☎ 0225 840060), CompuServe and most PD libraries.
9. When using *NeoDesk3*, you can display a personalised picture as a backdrop to your icons. Use a *Degas* (compressed or uncompressed) file or a *NeoChrome* file renamed NEOPIC_H (for high res), NEOPIC_M (medium) or NEOPIC_L (low) followed by the normal PI1, PI2, PI3, PC1, PC2, PC3 or NEO extension. Stick in your *Neodesk 3* folder and reboot to see it.
10. Don't even think about selling your ST for an Amiga games machine. You'll burn in Hull for the rest of your life!

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CITIZEN

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Technical support helpline open during office hours.

MADE IN THE UK
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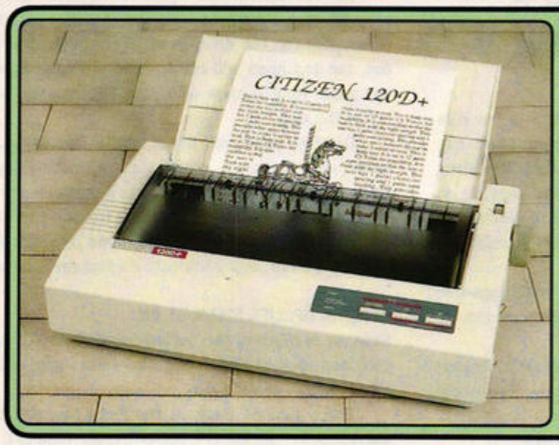

9 PIN PRINTER

144 CPS **80** COLUMN

- *Citizen 120D+ - 9 pin - 80 column*
- *144cps Draft, 30cps NLQ*
- *4K Printer Buffer + 2 Fonts*
- *Parallel or Serial Interface*
- *Graphics Resolution: 240×240dpi*
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RRP: £189
STARTER KIT £25
TOTAL RRP: £214
SAVING: £95
SILICA PRICE: £129

The 120D is supplied with a parallel interface. If you require a serial interface instead, please state when placing your order.

£129
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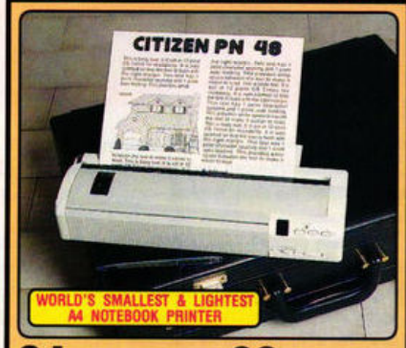
NOTEBOOK PRINTER



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9 PIN PRINTERS

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- *Parallel Interface*
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COLOUR KIT £38
STARTER KIT £25
TOTAL RRP: £302
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24 PIN PRINTERS

192 CPS **80** COLUMN

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- *8K Printer Buffer + 4 Fonts*
- *Parallel Interface*
- *Graphics Resolution: 360×360dpi*
- *Epson and IBM Emulation*
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- *FREE Silica Printer Starter Kit*

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192 CPS **136** COLUMN

- *Citizen Swift 24x - 24 pin - 136 column*
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TOTAL RRP: £555
SAVING: £206
SILICA PRICE: £349

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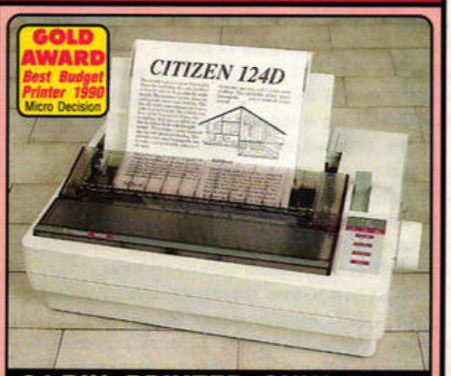
24 PIN PRINTER



24-PIN PRINTER ONLY £169!

144 CPS **80** COLUMN

- *Citizen 124D - 24 pin - 80 column*
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- *8K Printer Buffer + 2 Fonts*
- *Parallel Interface*
- *Graphics Resolution: 360×360dpi*
- *Epson and IBM Emulation*
- *FREE Semi Automatic Cut Sheet Feeder*
- *FREE Silica Printer Starter Kit*

RRP: £249
CUT SHEET FEEDER £40
STARTER KIT £25
TOTAL RRP: £314
SAVING: £145
SILICA PRICE: £169

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32K MEMORY EXPN
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PRA 1274 Swift 9x/24x £30.66

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RIB 3936 Swift 9/24 Colour £15.63
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RIB 3348 PN48 Multi Strike £4.11

COLOUR KITS
PRA1236 Swift 9/24 £39.65
PRA1240 Swift 9x/24x £44.18

PN48 ACCESSORIES
PRA 1148 PN48 Battery £51.70
PRA 1155 PN48 Cable Extn £ TBC
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All prices include VAT and Free delivery.

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DISK DRIVE SURGERY

PRIZE £50 WINNER

If you get a disk jammed in the disk drive you're looking at a £100 bill, because removing the disk often damages the drive. It's usually possible to repair it though, providing the electronics aren't damaged and you don't mind invalidating your ST's guarantee.

Usually the heads are pulled off their mountings and can be glued back. They generally need re-aligning too, so they correctly read data off the disk.

These instructions (from **Richard Fitzgerald** of **Essex**) see you through the process assuming that you have most popular drive – the CHINON FB354AA. If yours is different, don't worry – the procedure is basically the same.

THE FIRST INCISION

Make sure your ST is unplugged and you have enough space to work in. A table-top is great – working on your knees on the sofa isn't. Remove all the screws from the underside of your ST and remember their original positions. Gently lift off the top of the casing, and put it to one side.

Lift the keyboard and remove the connector which joins it to the main circuit. Remember which way round it goes – usually yellow wire towards the mouse port.

Lift the disk drive unit and remove the two cables. Loop these or tie them off so you don't lose them inside the ST. Put the ST to one side and work on the drive.

You must now remove the drive's cover. For Chinons see figures 1 & 2. Remove screws (A) and take off the metal plate. Unclip the plastic front of the drive (B). Remove screws (C) and slide the top backwards, being careful not to touch the electronics inside.

For other drive-types, look for the outermost part of the case and remove any screws which secure it. Continue until the case can be lifted or slid off. Unclip the front panel if it doesn't come off with the case. If there are any loose bits of circuit board (as in the case of the old single-sided drives) tie these out of the way.

IT'S OPEN – WE'RE GOING IN

You should now be able to see the mechanism. This is covered by the disk clamp – a large square plastic frame – which holds the disk steady. This is normally held by one or two screws at the back.

For the Chinon see figure 3. Remove screw (D) and slide the disk clamp out of its metal guides (E), taking care to support the top drive head. If you just yank the clamp out, the top head will crash down onto the bottom one – not good. Hold it back with your fingers until the clamp's out of the way.

Carefully push both heads with a matchstick. If they're loose, glue them into position using Bostick Clear or Evo-Stick. Don't use Superglue because it damages the mounting.

Once the heads are re-glued, replace the drive clamp and screw it in position (it may need jiggling). Make sure you put the top head back onto its supports as you do so.

CLOSING UP, LIFE SUPPORT ON

Start by re-aligning the bottom head first. You need a single-sided disk to check it with – most games are single-sided, so use one of them.

Place your ST back on the table top, and check that the cover is still on the power supply (nearest the mains input socket). If it's missing, *you must make sure you do not touch any portion of this area during the next bit. You have been warned – if you ignore this it could kill you.*

Place a piece of wood or plastic over the "hole" where the drive was and rest the drive on top. Reconnect it to the ST, plug in the keyboard and the mouse, connect a monitor and pop that single-sided game in the drive. Then plug in the mains and switch on. You should see the head moving – if you don't then the drive is beyond repair.

If the game autoboots then the lower head is fine. If not, look for the motor – it'll be one of two kinds, either threaded (figure 4) or split band (figure 5).

TWISTING THE BOTTOM

For threaded motors, see figure 6. Switch off the ST and loosen the two motor screws. Rotate the motor fully clockwise and re-tighten them.

Turn your ST back on and see if it boots the disk. If it doesn't, repeat the process but turn the motor slightly anti-clockwise each time. Do this until the disk boots.

For split band drives, switch off the power and rotate the motor pulley until the fixing screw on the band is visible. Loosen it and push the band fully either way. Re-tighten the screw. Turn on the ST and see if it boots. If it doesn't, repeat the process, adjusting the band a small step at a time.

YOUR SECOND HEAD

The method of fixing the top head is shown in figure 7. When the two screws are loosened, the head can slide in either direction. Loosen both screws and slide the mount back as far as it will go. Tighten the screws again.

Insert a *double*-sided disk and turn on the ST. If the disk boots then the drive is okay – you can move on to the reassembly stage.

If the disk doesn't boot, loosen one of the two screws. Move the head very slightly to one side. Tighten it and try booting again. If this doesn't work, repeat the procedure, but using the other screw. You end up gradually wiggling the head out until you find its optimum position (figure 8).

SEWING IT ALL UP AGAIN

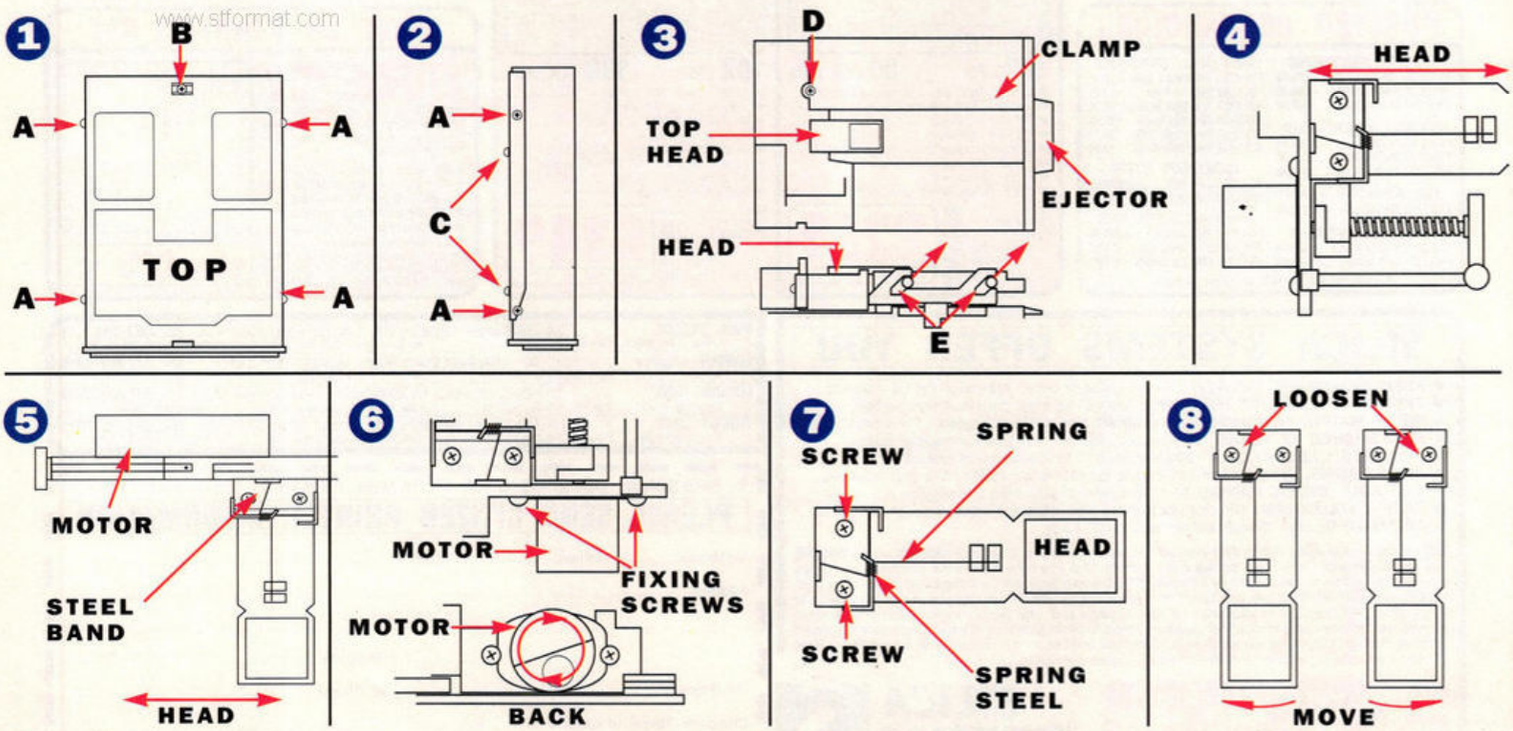
Once the drive works again, switch off the ST and unplug the drive. Gently put its casing back on and put the screws back in. Plug the whole thing back into the ST. Turn the ST over and support the drive while you screw back the three long fixing screws. Make sure that the metal pillar is located in the drive's other screw-hole. Replace the ST's top casing and tighten the remaining screws. That's it! Pat yourself on the back – you've just saved a small fortune. If, however, things haven't worked out quite the way they should have, look at our feature on Floppy Drives, starting on page 54.

END OF EMERGENCY – LET'S GET THE BLOOD CLEARED UP

ALL B BACK

Although it's nearly six years since the very first single-sided STs were launched, they are still the cause of problems for many people. Stephen Withrington from London and Stuart Rickards from Sandbach are both single-sided ST owners and they want to know how they can boot from an external, double-sided drive.

There is a way to do this, without resorting to hardware modifications. A brand new program called DIVERT has recently surfaced in the Public Domain. DIVERT's main function is to swap the drives around (as far as the ST is concerned), using only software functions. It's the work of the Hitchhiker, who, you may remember, was the author of the *Revenge Document Displayer* which was featured on Cover Disk 24. Currently, it's available on the Bath BBS (☎ 0225 840060 or ☎ 0225 835841), where you'll also find the *ST FORMAT* message service. If you haven't got a modem, panic not, for it may soon be available from most PD libraries (see page 50).



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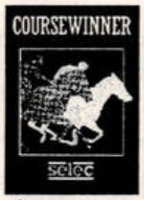

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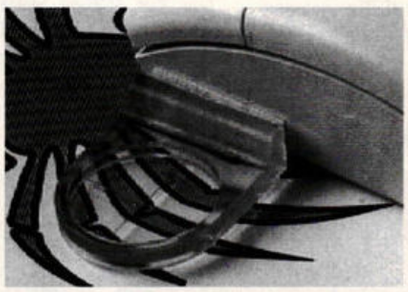

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GET YOUR COLOUR COORDINATED

If you've tried plotting or drawing with *GFA Basic* version 2, you may have noticed that things are a bit askew in the colour department. The reason for this is that the Setcolor commands, which you use to set up a new colour palette, don't correspond to the Color commands which actually print coloured pixels.

An extra command is included in *GFA Basic 3* to resolve this problem, though for compatiblity reasons the Setcolor command works exactly the same way in *GFA Basic 3* as it does in *GFA 2*.

Here's a short list which maps the Setcolor numbers to the Color numbers, so you can go back and modify your programs:

PICK A COLOUR, ANY COLOUR

SETCOLOR NUMBER	COLOR NUMBER
Setcolor 0	Color 0
Setcolor 1	Color 2
Setcolor 2	Color 3
Setcolor 3	Color 6
Setcolor 4	Color 4
Setcolor 5	Color 7
Setcolor 6	Color 5
Setcolor 7	Color 8
Setcolor 8	Color 9
Setcolor 9	Color 10
Setcolor 10	Color 11
Setcolor 11	Color 14
Setcolor 12	Color 12
Setcolor 13	Color 15
Setcolor 14	Color 13
Setcolor 15	Color 1

FORMAT NEEDS YOUR DESKTOP TIPS

Information is the oxygen of publishing, or something like that, Mrs Thatcher used to say. So if you've got a tip, a short cut, an undocumented feature, a bug, a password – in short, anything at all you've found helps you get more from your ST – we want to hear about it! That way you can share your information with well over 70,000 fellow ST enthusiasts and possibly win up to £50. Or, if you have a technical problem or query, we want to hear about that, too – just giving us the opportunity to wibble on a bit could win you £20. Do it now and make an old politician – er, older.

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Please complete this form and send it, along with your tip, to: *DESKTOP, ST FORMAT*, 30 Monmouth Street, Bath BA1 2BW.

INITIAL REACTIONS

The trouble with abbreviations is that nobody knows what you mean. **Gerd Reichinger** from **Vienna** is having trouble with the ST series of shorthand. He's seen an advert for the *MPH Monster Cartridge* and wants to know if it's compatible with his 1040 STF. In the ad, it says it's for STFMs. Wossit all mean, then? Here's how to read those shorthand codes:

ST – The original STs – these have no built-in modulator, no internal floppies, probably TOS 1.0, on disk at that! For all their failings, these old machines had the advantage that the mouse ports were located in a sensible place, too.

STF – The next generation, with internal floppy drive, but still no TV output. The mouse ports were moved to accommodate the drive, so now you know why they're in such a daft place.

STM – A weird one – no internal floppy, but a TV modulator built-in instead. Not many of these around, but a few 1040 versions exist.

STFM – The business! Internal floppy and a TV modulator. What more could you wish for?

STE – The latest incarnation. E for enhanced, and the F and M were dropped because the floppy and modulator were now standard on all the flat-case STs.

Most advertisers and third-party manufacturers tend to refer to the machines generically as either STs or STFMs. There's no difference between them except for the TOS version. You only really need to get worried about compatibility if you have an STE. But then most manufacturers are aware that the STE is different, and specifically mention it when their products are compatible. If you want to use your ST with a television, Silica (☎ 081 309 1111) sell a modulator for anyone without one already inside the ST.

'E PROMISED YOU A MIRACLE

The trouble with software is that it takes time to load. Wouldn't it be great if you could create your own programs and save them straight to an EPROM (Electrically Programmable Read Only Memory) and just plug them into the cartridge port? **Tom** (the man without a surname) from **Manchester** thinks so, and so does *STF*. So how do you go about it?

Currently, there are two EPROM-programmers (or EPROM blowers, as they're known in the electronics trade) available for the ST – the Lakmeyer 4Megabit and 1Megabit Programmers.

These devices plug straight into the cartridge port and you can insert an EPROM into a socket on the top. Software accompanies the unit, providing functions to save files and data direct to the EPROM. Then, when you re-boot your ST, the programs in the EPROM get executed immediately, before any disk accessing occurs.

The 1Megabit unit can program a wide range of EPROMs, including 2764, 27128, 27256, 27512 and 271000 versions, while the 4Megabit unit can do all these plus 2MByte and 4MByte EPROMs.

They are supplied in this country by James Sinclare (☎ 081 316 1779) and cost £276.15 for the 4Megabit unit or £193.88 for the 1Megabit unit.

SIMM CITY

If you're a 520 STE owner, like **Graeme Dobie** from **Edinburgh,** you may want to upgrade your machine by adding some extra memory. But before you go trotting off to the shop to part with your hard-earned cash, check out these basic SIMM facts to make sure you get what you really need.

SIMMs (short for Single In-line Memory Modules) come in three standard types, which work on almost all SIMM-based computers. You can buy 256KByte, 1MByte and 4MByte SIMMs from most good repair-shops (Ladbrokes, ☎ 0772 203166).

SIMMS come fitted with either eight or nine memory chips surface-mounted onto a small printed circuit board with a row of edge connectors along one side. The nine-chip versions are mainly used by PC contemtibles which need the ninth chip for parity-checking. Most other sensible machines (STEs included) only require eight chips, but you can use either without fear in an STE.

The only other important thing to be aware of when buying SIMMs is access time. This is techno-speak for the amount of time it takes the SIMM to "find" and transmit the data after the STE's processor requests it. Currently, STE SIMMs have an access time of 15 nanoseconds, which may sound fast, but in computing terms is not too amazing. This means that most SIMMs will do the job (and may even be faster, but you won't notice the difference).

Finally, always buy your SIMMs in pairs. The STE requires two SIMMs in its slots to make up a full bank of memory, whatever the configuration. The table below shows what it expects to find.

This can make for some annoying "left-overs," especially if you're upgrading a 1MByte STE to 2 – 4MBytes, since you need to remove the now useless 256K SIMMs. You may be able to sell these to offset the cost of your upgrade.

Don't try and upgrade your STE using lop-sided arrangements – a pair is always required – and don't buy four 4MByte SIMMs in the hope that you can make a 16Meg STE. This cannot be done without some major modifications and chip replacements – without major hardware modifications, the ST's Memory Management Unit (MMU) can only address 4MBytes in total. ***stf***

UNMODFIED MACHINE:	UPGRADING TO:	# OF SIMMS REQUIRED:	SIMM TYPE	TOTAL COST	SLOTS USED	LEFT-OVERS
520STE	1MB	2	256KB	£30	1 & 3	None
	2MB	2	1MB	£75	1 & 3	2x256K
	4MB	4	1MB	£150	1,2,3 & 4	2x256K
1040 STE or Mega STE1	2MB	2	1MB	£75	1 & 3	4x256K
	4MB	4	1MB	£150	1,2,3 & 4	4x256K
Mega STE2	4MB	2	1MB	£75	1,2,3 & 4	none

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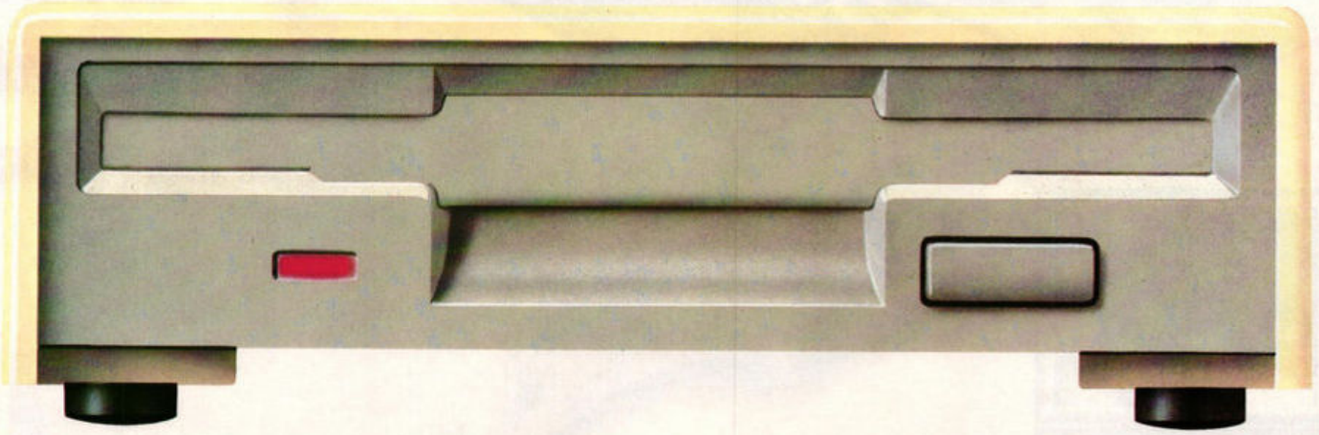
Where you can stick it.



Viruses, disk swapping, single sided internal drives, disks which won't back up. Is there no end to the whingeing of the Atari user?

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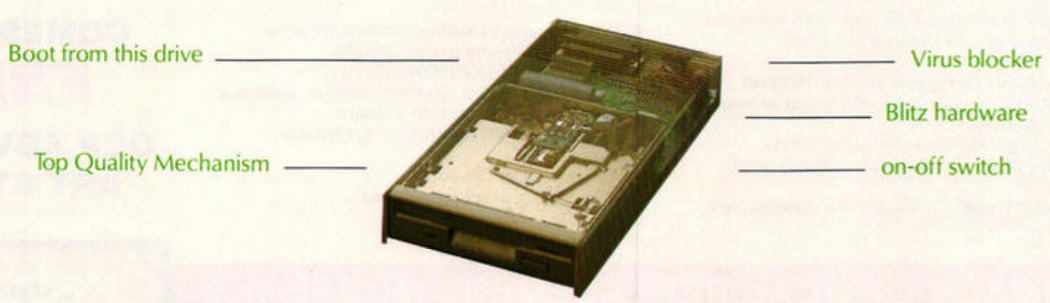

When you do not want these features, switch them off and the PC720B will pretend to be simply an extra drive.

The PC720B, the only drive to include Blitz Turbo, lets you boot from an external drive and combat viruses, is only available direct from Power, priced at just **£65**.

We have noticed how pricey unintelligent drives are. Perhaps, its your turn to tell people where to stick it.

*Internal drive is disabled while this feature is in use. Compatible with most models of Atari ST

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Feedback

Write to: The Editor, Feedback, *ST FORMAT*, 30 Monmouth Street, Bath, Avon BA1 2BW

ESSENTIAL UPGRADES

■ I own a 520 ST, and am writing to ask what would be the best extension to buy – a 1MByte RAM upgrade or an external disk drive with a built in 1MByte? Also could you tell me when *Beast 2* and *Maddog Williams* are coming out on the ST?

Paul Foster
Hants

stf: *First, Paul, I need to clear up a misunderstanding you seem to have. An external disk drive doesn't have any built-in memory but it is capable of reading double-sided disks (containing up to 1MByte of information).*

The choice you need to make depends on the software you intend to run on your ST. Since you're asking about games, I assume you're a game-player, in which case you're likely to find the extra memory more use than the second drive. Surprisingly few games make use of a second disk drive, yet many take advantage of extra memory. For example, if you have only 0.5MByte of RAM Wonderland *only enables you to open two windows instead of the full six.*

Another reason to opt for extra memory is that many new games only run with 1MByte of memory. For example, take a look at this month's FORMAT Gold winner, Railroad Tycoon *(reviewed on page 62) or* The Immortal, *recently released by Electronic Arts on budget – both need 1MByte to run. Many forthcoming games are likely to be 1MByte only, including* Silent Service 2 *and* Vengeance. *The Bullfrogs are even suggesting* Populous 2 *might be 1MByte only when it's finally released.*

Maddog Williams *is already on the shelves. If you're having trouble getting your hands on it then give Game Crafters a call on ☎ 0274 599225, though if you check out our review on page 89 I doubt you'll still want it. For details on* Beast 2, *check out our Previews section, page 25.*

NO SUPERHEROES AT OCEAN

■ After reading your special guide about viruses in issue 27, I was particularly interested in which software houses will replace corrupt games. But this report did not include the software house Ocean, who, to my mind, just seem to concentrate on turfing out 20 games a year and don't care about customer relations.

In December last year, I sent away *Batman: The Movie* to Ocean because of some sort of virus and, after a month, because I had had no reply, I wrote another letter asking what had happened. I continued to send letters but never had a reply. I read somewhere that someone else was having problems, and the answer was to enclose an SAE. So I did this, but still no reply. After four months of waiting I gave up and I concluded that the game was lost forever.

Please could you tell me and other people what to do if something like this happens. Usually, I would have taken it back to the shop I bought it from, but this was a present, so I could not do so.

Other companies, such as Virgin, are happy to replace games free or for a small fee. This is probably because they like to keep a good reputation with customers. Some software shops, like Silica, are happy to replace any software. Why is this? Is it because they are large stockists of Ocean games and Ocean don't want to lose clients?

M Wilkinson
Kent

stf: *When we were writing last issue's virus feature, we contacted Ocean to find out what their policy was on replac-* →

SHORT BUT SWEET – JUST THE WAY WE LIKE 'EM

If you can fit all you want to say on a postcard, just send it in

■ I read Ed Ricketts' review of *Maupiti Island* in September's issue of *STF* and I am bowled over by the graphical detail of the game! I want to get one! Thing is, no release date was given, so can you tell me when it will be released and where I can get it?

Richard Rycraft
Kent

stf: *We deliberately time our reviews so that they appear in the shops at roughly the same time as the game. Look through our adverts or try your local branch of John Menzies or WH Smith's for a copy of the game. Alternatively, give UBI Soft a ring directly on ☎ 0252 860299.*

■ Please can you tell me how many levels there are on the *Llamatron* game which was featured on Cover Disk 24?

I have, so far, tackled my way through Coke Cans, Burgers, Toilets, Telephones and Brains and got as far as level 61. Knowing how many levels there are would surely give me the initiative I need to do better!!

Rachael Western
Cwmbran

stf *There are 100 levels in our Cover Disk demo – and they're all very silly.*

■ New-look *ST FORMAT*. Fantastic.
Same price. Amazing.
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New size. Aaarrrggghhh!
Slight problem, methinks. Has anyone else noticed that the new "wide-screen" *STF* doesn't actually fit into those rather attractive red binders?
I think we should be told!

Gareth Harrison
Staffs

stf: *We're now selling new bigger binders to accommodate the new-sized issues – check out our special offers, page 118. If you (or anyone else) bought a new binder since issue 25 then contact our mail order department on ☎ 0458 74011 and they'll send you a new improved binder.*

■ I own an Atari 260 upgraded to 2.5MByte. I have enjoyed it for quite some time, playing all kinds of games, but I would now like to design my own games. A couple of issues ago, you suggested someone use *STOS*. I can remember a review of *Prehistorik* in one of your issues and it was written in *STOS*, but the reviewer wasn't very gentle about it! Should I forget *STOS* and try assembly language or could you do professional things with *STOS* as well?

A Koomen
Holland

stf: *There are many game creators on the market, depending on the type of game you want to create.* STAC *is ideal for writing complex adventures;* SEUCK *is perfect for those manic shoot-'em-ups and* Tailspin *will help out if you want to write a role-playing game.* STOS *is the most versatile game creator because it is a BASIC-type language geared towards creating games. This makes* STOS *very easy to use and ideal for straightforward games such as* Prehistorik, *which is why we're selling it cheap through our Special Offers pages (see page 118 if you missed it). However, to get real power and speed out of your ST, you need to write in assembly language – the language most game writers choose.*

Keep an eye open for our January issue where we'll look in detail at everything you need to write your own game, including a very special package on the Cover Disk.

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ing virused disks. They had no-one on hand who knew whether they would replace damaged disks and no representative of Ocean ever returned our call, so we were forced to take their name out of the line-up.

With Christmas rapidly approaching, it's important the software houses do their utmost to get their house in order and sort out a decent service for their customers. It seems that Ocean themselves recognise that they have a problem. When I spoke to their PR man, Ken Lockley, he said, "Until recently we haven't had competent people in our mail order department" – hence your trouble with Batman. *They still have a backlog of problems to resolve, but Ocean assure us they are offering an improved returns service.*

If you buy a game then get it home and discover it's dodgy, you should always take it back to the shop first. If you can't get any satisfaction from the shop then send it back to the software house, preferably by recorded delivery so you can prove they received it. In the case of your Batman *game, Ocean have said they'll send you a new copy straight away. If you still don't hear from them by the time you read this, write to Ocean or give their mail order department a call on ☎ 061 832 6633 and remind them to send your game out.*

If anyone else has trouble getting the software publishers to replace damaged disks and you've exhausted all other alternatives, drop us a line and we'll do our best to sort it out. To help us get on to your problem as quickly as possible, please address your letter to Replacement Problems, ST FORMAT, *30 Monmouth Street, Bath, Avon BA1 2BW.*

WAKE UP, ATARI!

■ Would you please ask Atari why they are running two page adverts in *ST FORMAT* and other magazines, asking those interested to fill in and send the coupon off for more details?

I ask because I have sent in, many months apart, two of these coupons asking for more details and I am still waiting for Atari to respond to my query. If Atari react at the speed of a dead cockroach to the possible sale of their computers, how quick will they move if said computer turns out to be faulty? Maybe I should go and buy a different make of computer.

Mr AH Mahon
Wirral

stf: *I contacted Atari on your behalf and they said they couldn't understand what had happened to your enquiry. Apparently they receive over 400 enquiries from the advert each week and they send brochures out in batches. The pack comprises an eight page leaflet about the ST range and peripherals, plus a four page leaflet on the family curriculum pack. This is then sent to Silica who add their extensive price list before sending it on to you. They say a three week delay is the maximum you're likely to encounter.*

We tested out Atari's service ourselves to find out if there really was some problem and received a response within a fortnight.

FREEDOM FROM FLOPPIES

■ When I bought *Flames of Freedom* I made a call to the Microprose hotline only to discover that you couldn't install the game on a hard drive. This is a major omission for a company such as Microprose on a game which, while excellent in all other areas, is rendered virtually unplayable by constant and lengthy disk accessing. Every time you destroy an enemy unit and every time you talk to anyone, practically every main action requires a lengthy wait while the disk drive churns away.

My plea to Microprose is that you don't spoil the ship for a ha'p'orth of tar – *Flames of Freedom* is a great game virtually ruined by excessive disk accessing, not to mention the wear and tear on my drive.

I do not believe it could be that difficult to offer some of the options found in *MegaTraveller, Wonderland* and any *Sierra* game. A hard drive is going to become an increasingly essential requirement with today's memory-hungry games.

Don't neglect the "minority" of hard drive owners – these are the people who are more likely to be able to spend £30-plus on a game. I, for one, would be prepared to buy a hard drive just to play *Flames of Freedom*. As it is, I just feel rather cheated.

Colin Cooper
Essex

stf: *An ever-increasing number of ST owners are now investing in hard drives but still very few games are making use of this hardware advantage. I contacted Microprose on your behlaf and spoke to their technical department to find out what the problem was. According to them, to make* Midwinter 2 *run on a hard drive setup would have caused programming team Maelstrom major problems. "It would have meant a total re-write to get the game to run on a hard drive." To incorporate the extra code to make the game hard drive compatible would actually have slowed down the running speed from floppy drive.*

Microprose say they researched the ST hard drive situation and found it wasn't worth producing an ST hard drive version. They spoke to Atari and conferred with Silica before reaching the extraordinary conclusion that only 5% of ST owners have a hard drive. In their wisdom, Microprose decided that this was too few a number to worry about.

When we ran our own reader survey as long ago as April, we found that 10% of you owned hard drives and 26% of you intended to buy a hard drive during the year. Either you've all sold your drives or Microprose have got their sums wrong.

Microprose insist that the reason they neglected a hard drive version had nothing to do with the fact the Midwinter 2 *was so massively delayed that they couldn't justify spending the extra time it would have taken.*

Many future Microprose games will only run on 1MByte STs and these will be able to be installed on a hard drive. For example, Railroad Tycoon *(reviewed on page 62) and the forthcoming* Silent Service 2 *are both 1MByte games and both can be installed on a hard drive.*

There's little chance we'll see an updated version of Midwinter 2 *but all the signs are that other software houses are beginning to appreciate the importance of writing games to run from hard drive. Peter Molyneux from Bullfrog has always intended* Populous 2 *to run from hard drive and Virgin's* Wonderland *was such a huge adventure they even recommended you use it with a hard drive.*

BRAIN CELLS FOR THE UNINITIATED

■ On September's Cover Disk, I was delighted to see a demo virus killing program. I checked all of my collection of disks using this program as well as immunising all of those which were safely possible, and, overall, I found it most useful and helpful to me.

However, I also have another virus killing program which I use frequently and am very familiar with. When I checked my disks on this program again, having already checked them with the Cover Disk checker, all my disks were detected as potentially unsafe. Could you tell me what's happening? This is making me wonder if my original virus killer is unreliable.

Jeremy Campbell
Hull

stf: *Presumably you used the virus killer to immunise your disks. When a virus attempts to copy itself onto new disks, it first checks to make sure that it isn't already located on the disk. The immunisation process copies some characteristic – but safe! – bits of the virus onto the bootsector of your disk, so that any virus thinks it's already on the disk and won't then copy itself back onto the disk. Depending on how extensive the immunisation process is, some virus killers detect the immunisation as being a potential virus, hence the warning. The trick is not to worry about immunising your disks.*

While we're on the subject, some readers have used our virus killer on game disks despite our warning to the contrary. This is a very silly thing to do. Most games feature unusual bootsectors which are interpreted by virus-checkers as viruses. If you attempt to kill these viruses or immunise your games disks, you will erase your game. Enough said.

BACK TO THE HOUSES

■ I know it is against the law to copy a game, but what about making backups? My friend lost *Speedball 2* (after the guarantee expired) because he was not able to make a backup. Are there any programs that can back up a game?

Tim Tudor-Hart
Cornwall

stf: *If you lose a game because you can't take a backup, then always return the game to the software house and request a replacement. At the moment the games software publishers are making a fuss about backup devices, insisting that all backup devices should not be sold even though they have a very legitimate use. While the software houses continue with this bullish attitude, they ought to be replacing games which get damaged.*

Currently the law treats software in the same way as records and tapes – that is, the software houses are not legally obliged to replace your game, provided it was in a working condition when they sold it to you. However, there are moves to change this so that customers are permitted to take a backup for their own use. The simple act of reading a floppy disk impairs its quality. Couple this with the fact that a floppy disk can be damaged simply by leaving it next to your monitor or on top of your hi-fi and you have vulnerable storage medium which in no way compares to records or tapes.

Thankfully, many software houses have the intelligence to realise the problem with disk-based information and will →

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happily replace damaged games. Give Mirrorsoft a call on ☎ 071 928 1454 and ask them to replace Speedball 2 *for you. If they refuse, write and let me know. The same goes for anyone else who encounters the same problem and cannot get satisfaction from the software houses.*

DESPERATELY SEEKING A REAL MUG

■ I recently bought a modem and I wanted to get hold of a list of phone numbers or bulletin boards. I read your feature in issue 11 and I was wondering when there would be another top 20 list of BBS. Also, will there be any reviews of any MUG (multi-User games) and any new BBS's that will be opening soon?

Frank Coorey
Wigan

stf: *Communications is an odd subject: Most people find it deadly boring and wouldn't be seen dead with a modem, but those that have ventured into comms scream and shout to get noticed. At the moment I have no plans to run a comms feature because I'm not convinced there are enough exciting things happening on bulletin boards to justify a feature. Similarly, there just are not enough good multi-user games to make it worth discussing them.*

But don't let it be said that STF doesn't listen to its readers: Here are a list of 10 BBSs you can contact.

1. Brunel BBS, Bristol, Avon ☎ 0272 584352 (2400 baud)
2. Eldorado, Coventry, Midlands ☎ 0203 552590 (1200 baud)
3. Lightfingers Place, Bournemouth ☎ 0202 485723 (2400 baud)
4. Micro-Mola, Plumstead, London ☎ 081 316 7402 (2400 baud)
5. My Little Phoney, Oxford ☎ 0865 773277 (2400 baud)
6. Sheffield Alt., Sheffield ☎ 0742 325232 (2400 baud)
7. Starbase One, Brixton, London ☎ 071 733 3992 (2400 baud)
8. STun, Stockport ☎ 061 429 9803 (2400 baud)
9. The Hotel BBS, Rochester, Kent ☎ 0634 831389 (1200 baud)
10. The Village, Bromley, Kent ☎ 081 464 2516 (2400 baud)

If you want to leave mail for ST FORMAT *you can contact the Bath BBS ☎ 0225 840060 (2400 baud). They also have our Cover Disks on-line.*

UNITE AND CONQUER

■ Over the years there have been many user groups for various computers, but during the two-and-a-half years I have owned an ST I have seen very little mention of them. Do they still exist or have they folded through lack of support?

I feel that a local group could be of benefit to many people, giving opportunities to exchange ideas, tips, unwanted software, etc. It would also be nice to know that there could be someone on the other end of the phone who could give help, if needed, to solve a problem.

With this in mind, I would like to try to organise a group in the South Devon area and would be grateful if you could print this letter with my full address, in the hope that enough people will contact me to enable a group to be formed.

Keith Harris
17 Belmont Close, Kingsteignton
Newton Abbot TQ12 3TT

stf: *Many informal user groups have been set up all over the country, Keith. Many Atari dealers open their shop one evening a week/month for like-minded ST folk to get together and exchange utilities, ideas and problems. I have been badgering Atari for two months to get a list of the known user groups on their files. As yet they haven't responded but I don't give up easily. As soon as we get our hands on the complete list you can guarantee we'll print it in* ST FORMAT. *Watch this space!*

WHITE AND WHITE BUT STILL READ ALL OVER

■ I am writing to say that I am extremely disappointed in discovering that September's issue of *ST FORMAT* has yet again got a very boring cover. The last five issues have had a mainly white background with a few colourful items and text spread over it. I find it very boring and it doesn't attract me to buy it.

Ben Coley
South Devon

stf: *The cover of any magazine is designed to sell the issue, not to be a pretty picture which you can hang on your wall when you get home. You don't buy the magazine because of the picture we use on the cover but for what you can get out of it when you get it home. Bearing this in mind, I feel it's important to highlight the major features and reviews on offer in the magazine. Previously, ST FORMAT used "single-image" covers, but these did a poor job of conveying the diverse range of contents. Unless you were specifically interested in the main feature relating to the image, there was nothing worth opening the mag for.*

We choose white as a background for the cover because it stands out so well on the newsstands. Surrounded by other computer magazines with great blotches of colour and confused images, ST FORMAT leaps out at you. Next time you're in the newsagent, stand back and give it a try.

If anyone else has an opinion on our cover or any other part of the magazine, drop me a line. ***stf***

WANTED!

Your honest opinion of *ST FORMAT*

■ To help us keep improving your favourite magazine, please fill in and return this form each month

1. Rate *ST FORMAT* in terms of value for money:
❒ Excellent! ❒ Good
❒ Reasonable ❒ Poor ❒ Ripoff!

2. How did you buy this issue?
❒ I subscribe
❒ Asked newsagent to reserve copy
❒ Had it delivered to my home
❒ Just went in and bought it

3. Out of ten, how much did this month's cover make you want to look inside? ...../10

4. How much does this issue appeal to you overall? ...../10

5. How does it compare with previous issues you've seen?
❒ Much better! ❒ Slightly better
❒ About the same standard
❒ Slightly worse ❒ Much worse!

6. Rate out of ten this and any other computer magazines you read regularly:
ST FORMAT ...../10
...../10
...../10
...../10
...../10

7. Out of ten, how useful did you find this month's Fractals feature?
...../10

8. What do you like *most* and then *least* about this issue?
I *most* like.....
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.....
.....
And I *least* like.....
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* Leave blank if you wish – but we may want to send you details of exclusive special offers

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Return to:
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It's that time of the issue again. Time to dream of fabulous software... time to look back with fond memories at the latest issue... time to think of Friday night with Deirdre (er, maybe not). Get these 20 teasers right and you could win one of five fabulous *Pagestream 2* packages worth a massive £1,000! Get them wrong and you'll deserve a spell in front of *Prisoner: Cell Block H*. As ever, the silliest postcard wins a toffets wrapper and a bright mauve louffer

Desktop publishing – you can't live with it, you can't live without it. Well, you could try – but you wouldn't see magazines looking as slick as *ST FORMAT*. Now it's *your* opportunity to exercise your creative urges on design and typography.

You might want to write reports or construct tables and charts. Maybe newsletters are more your thing. You might even have ambitions to run a fanzine. *Pagestream 2* meets all your demands. It's loaded with all the features you'd expect to find in a top-of-the-range DTP package for the Apple Macintosh, yet it costs a fraction of the price!

Pagestream 2 struck Gold in our DTP review (see page 42) so we went on the trail of some compo prizes. And we got 'em. Soft-Logic in the States are giving away £1,000 worth of *Pagestream 2* packages.

Pagestream 2 offers all the DTP features you'd expect from a top-of-the-range system – like rotated text, text runing around pictures and a vast array of typographical functions. But it also offers a wealth of extra features which make it the perfect professional system – like colour, for instance. Seven colour protocols are supported, giving you an exhaustive choice. Then there are the new outline fonts – they are accurately scaled to give a perfect

You only need a quick tour of the menus to get a feel for what* Pagestream 2 *can do – and the new features aren't included at the expense of the old. It is an incredibly versatile and functional package for all forms of DTP, whether professional or amateur

ST FORMAT 28, page 42

1 Jayne and Richard Dunn have previously written a series of five educational packages – what's the name of the series?

2 *Pagestream 2* enables you to import graphics in a variety of popular Macintosh art formats, besides the usual ST file types. What do you see when you try to show Mac piccies on an ST screen?

3 What's the only ST DTP package that enables you to use Compugraphic fonts?

4 What new serious software package makes an unlikely double act with a duck?

5 A Polish man came up with a new theory which he could show graphically. He called it the mu-set. What's it also known as?

6 Two war games and a sports sim are coming for the ST – but which software publisher is releasing these new American games?

7 How much free space (in Kilobytes) is left on this month's Cover Disk?

8 Chaos theory is being used to study stock-market trends, weather patterns, nature theories and even human behaviour – but what new dimension is now being explored?

9 Argonaut reached dizzy new heights when they released a revolutionary ST space game four years ago – but what was it called?

10 Not content with releasing the amazing *Llamatron* game as Shareware (on *FORMAT* Cover Disk 24 – see page 130), Jeff Minter now plans to release what new game?

11 Give the name of a popular PD ST spreadsheet program.

12 Which well-known, high-flying Atari coin-op platform game conversion made a brief unlawful appearance in the Public Domain?

13 Game publishers Domark are releasing an ST conversion of a violent Atari coin-op that the Marquess of Queensberry wouldn't approve of. What's it called?

14 The *Lemmings* data disk has very sadly been postponed – until when?

15 Which floppy drive under review this month uses a Chinon drive mechanism?

DON'T MISS NEXT MONTH'S GRAPHICS FEATURE, *SUPERFULCRUM* REVIEW AND A ROUNDUP OF BOOKS

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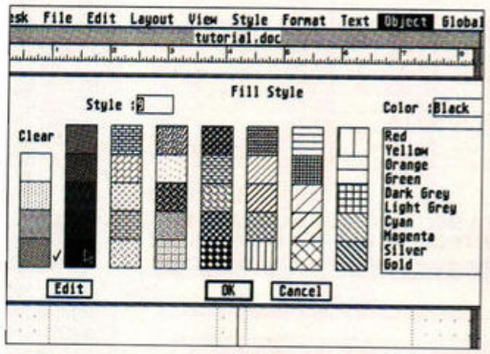
# of DTP software

on-screen representation whatever your magnification. As if that's not enough, check out *Pagestream 2's* graphics handling facilities. You can import all the standard ST file-types, as well as the majority of Apple Macintosh graphic files.

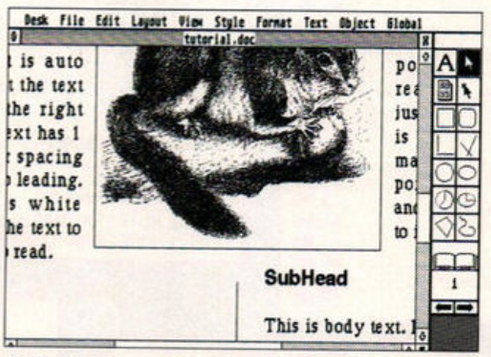
For really complex documents you need a 4MByte ST to make the most of *Pagestream 2*, but it runs just as well on a 520 if you only want to create simple documents like reports, letters or flyers.

What's more, *Pagestream 2* is also compatible with the TT (Atari's super-fast ST) – so as your DTP demands grow, there's always an opportunity to continue using *Pagestream 2* on an even faster ST.

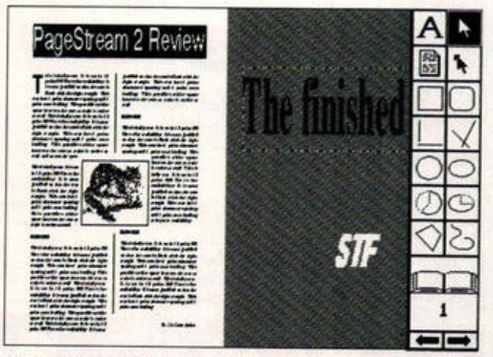
Take the DTP world by the scruff of its neck and get hold of *Pagestream 2* right now. To save you digging deep into your pocket, we've got five copies of this astonishing new entry into the publishing field ready and waiting to be won. Get your brain around these daunting 20 questions and today could be your lucky day!



● If you want to produce charts or tables, there are a variety of fill patterns and drawing commands to help turn boring information into a visual feast.



● Liven up your page by importing graphics. Then force text to run around the picture, or re-scale or rotate it. Your imagination can run riot.



● *Pagestream 2* enables you to produce your own professional magazine. See how everything comes together to create a sophisticated layout.

16 Which port on the back of your ST plays host to the Atari laser printer?

17 What program on this issue's Cover Disk enables you to generate your own fractal landscapes using little more than a number?

18 There were inherent design faults in the first ST laptop, but Atari have rectified them in their new portable ST promised for 1992. What's it called?

19 *Sound Tools* is a top-of-the-range hard drive recording system but you need a mammoth hard drive to be able to use it. What hard drive did our reviewer use to test *Sound Tools?*

20 Give the name of the pilot of Thunderbird 4.

Write your answers on the back of a postcard or envelope, then simply send it off to November Quizzicals, *ST FORMAT*, 29 Monmouth Street, Bath, Avon BA1 2DL.
All entries must arrive at the office on or before Friday 8 November.

THE RULES BOX

1. All entries must arrive at the luxurious *ST FORMAT* offices in exclusive Beauford Court *(shome mistake, shurely)* before Friday 8 November and positively no later.

2. Employees of Future Publishing and SoftLogic are all too smart to enter, so they mustn't. Any relatives or genetic clones are also banned.

3. Sending one entry through time and space is cool, though we really do prefer postcards. Sending two or more is really a bit on the rude side, so we'll run you (or just your postcard, if you're lucky) through the shredding machine.

4. You get what you see. We can't offer an alternative cash prize – and that's assuming you win, already!

5. The decision of the judge – probably Hendrix the dog, 'cos he's as honest as they come – is absolutely final, and no correspondence can be entered into. Besides, there'e no point in writing to him to complain anyway 'cos he can't read. Not very well, anyway. Not yet.

OCTOBER QUIZ ANSWERS

Last month we offered three Protar 30MByte hard drives as prizes. Did you win one? Find out next month! For now, check your answers.

1. Which famous film star popped his clogs during the making of *Plan 9 from Outer Space?* **Bela Lugosi**
2. Name the author of the novel which was made into an ST game and video, out now. **Stephen Coonts *(Flight of the Intruder)***
3. What's the name of the technique for customising a standard letter? **Mail-merge** *(not* "typing in all the names and addresses")
4. Revenge is sweet, but naming this brand new games company is more likely to get you a correct answer. **Revolution**
5. How many courses are in *Microprose Golf?* **Six**
6. What is FOD? **Foreign Object Damage**
7. Which sensible artist is as mad as a jackrabbit? **John Hare**
8. Which gets executed first, the AUTO folder programs or the Desk Accessories? **AUTO folder programs**
9. In *Rolling Ronny* which items make you invulnerable? **MegaHonk**
10. What PD demo boasts a guest appearance by the new and old Avenger John Steed (AKA Patrick McNee)? ***Kinky Boots***
11. What's the highest score you can make in a single break of snooker? **147** (or if your opponent opens and misses the reds entirely, 155)
12. Which two hot and sexy processors are Atari going to use in their new machines? **68030 and 68040**
13. Name the two BASIC data file types. **Sequential and random**
14. What is atropine used for in *Life & Death?* **Bradycardia**
15. Which doctor wrote *ST Writer Elite?* **Bruce Noonan MD**
16. Which German city hosts an autumn ST show? **Dusseldorf**
17. What kind of program would you use to keep track of all the scores in an amateur football league? **A database**
18. What hat got chosen for my potato? **Trilby**
19. What film featured the clever but illegal use of a small Atari-built personal organiser? ***Terminator 2***
20. Name Atari UK's Geordie boss. **Bob Gleadow**

SEPTEMBER QUIZ WINNERS

In September we gave away a Supercharger SC-Plus Emulator and a whole wodge of *Chronos* and *Prism* packages from Condor Trading. Our respective lucky winners are: **Andrew MacCormack** from **Aberdeen** and **B Stone** from **Staffs**

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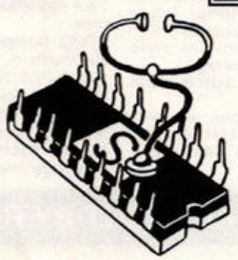

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GAMES

BG.01 Monopoly; Classic property game. Plus: Chess, Backgammon, USA Football.
BG.02 Haunted House; Platform game. Plus: Daleks, Aggravation, Warzone..
BG.06 DGDB; Gauntlet style game. Plus: Stone De-luxe, Breakanoid and Fruit Machine Simulator.
BG.14 Invasion; STAC produced text and graphics adventure. Plus: Cluedo style detective game and Paranoia...
BG.17 Spooks; Super Pac-Man version. Plus: Pipe Panic; arcade favourite!
BG.18 Megaroids; Asteroids version. Plus: Line Up 4, Hangman, Explode, Blaster, V-Kill; Virus Killer.
BG.19 Cards; Cribbage, Poker squares, Solitaire, Klondike, Blackjack. Plus: Rubics Cube, Fun Face...
BG.20 Dungeon Master; Maps of levels showing doors, treasure etc. Plus 40+ pages of information, hints, tips...
BG.24 Give us a break; version of the pub snooker/trivia game.
BG.27 Strip Breakout; Knockout bricks to reveal a naughty picture...
BG.34 Assassin; Excellent graphic adventure written with STAC.
BG.43 Wizards Tower; Superb text and graphics adventure written with STAC.
BG.44 Zoltar II; Super shoot-em-up game with digitised sounds!
BG.45 Orbit II; Superior Arkanoid copy, compiled STOS game!
BG.47 Vegas Gambler; Professional Casino style games: Roulette, Poker, Blackjack and Slot Machine!
BG.55 Froggy; Classic road crossing game. Plus: Caves of Rigel; maze game.
BG.56 Cribbage, Checkers, Yahtzee, Target and Joust, Arcade classic!
BG.57 Dungeon Master - NEW Dungeon created using Dungeon Master Editor! Original Dungeon master required!
BG.58 Soko; Original addictive 50 level puzzle game. ST Format ****
BG.59 Bubble Trouble; Smooth Pacman variation. Jumpster; Q-Bert style...
BG.62 Millipede; very good version of the old arcade classic.
BG.64 STumped; STOS produced tactical cricket game. STOS not needed to run!
BG.65 Joust; Arcade game version. Space War; space strategy game.
BG.66 Mystic Well; Dungeon Master style role play adventuring game.
BG.67 Temon; Shoot-em-up construction kit produced arcade game.
BG.68 Die Alien Blob; SEUCK produced vertical scrolling action game.
BG.70 Hac-Man; Very professional Pac-Man version. Plus: Hero; Gauntlet style game.
MG.01 Bolo; Arkanoid variation, bat can move all over screen! (col/mon).
MG.04 Bumper Jack; STOS produced platform game. Plus Yatzy; dice game.
MG.05 Mars Maze; another excellent STOS produced platform game.
MG.08 Star Trek - Next Generation; Battle the Ferengi in this strategy game, digitised samples! (Not STE)

UTILITIES

BU.01 Neochrome MASTER; Will now load Degas and IFF format! Animation fully implemented, total keyboard control, object rotation, 10 screens, rasters.
BU.07 STWriter ELITE; high quality word processor. Fully documented!
BU.29 Label printing accessories; address, disk and cassette labels.
BU.34 B-Boot; Enables booting from drive B, address book, database etc.
BU.36 Assistant Chef; excellent recipe database for the cooks...
BU.37 Pools; expert results predictor, includes large match database!
BU.39 Fractal Zoom; comprehensive fractal generation program.
BU.42 GEM fonts; 60+ fonts for hi-res screen and Epson printers.
BU.44 .IMG utilities; convert Degas, Neo, Tiny etc. to .IMG format!
BU.45 Planetarium; Astronomy, view the stars from anywhere in the world.
BU.46 Mouse Pointer; design your own pointer! 50 shapes included! etc...
BU47 Eplan; CAD program for design of electrical circuits, documentation on disk. Print out finished circuits!
BU.48 Home Accounts; up to 3 different statements; 100 entries per statement.
BU.49 Typing Tutor; excellent English typing tutor. Includes exercises on home keys, numbers, capitals, etc..
BU.50 GEM Font Master; super font editing program, use 3 resolutions!
BU.53 Opus spreadsheet + charting program - quality shareware! (D/S)
BU.54 Amateur Radio Utilities; Morse tutor, Grayline calculator, etc.
BU.56 Your second manual to the Atari ST, invaluable reference book...
BU.57 ANI-ST (formerly Aegis Animator costing £79.90!) + GFA Raytrace demo!
BU.58 FSelect; alternative file selector, Desk Manager; Choose auto programs & accessories etc..
BU.59 ZX81 Emulator; including 38 program files! Uses the original keyword entry system. Brilliant!
BU.60 BBC Emulator, + Apple Emulator, accessories; CPanel & Disk Cache. Disk Toolbox; useful disk utilities!
BU.61 ZX81 Programs; 100+ files to use with ZX81 emulator (BU.59), 3D Defender, Pacman, Chess...
BU.64 Fractal Landscape Explorer, Mandelbrot show, Spirograph...
BU.67 Cardfile; Simple name and address database with search facility.
BU.68 Magniwriter; ST Writer version with larger text! Ideal for use on TV, for children or poor eyesight!
BU.72 STE Boot disk; enables STE to boot up in medium resolution! etc...
BU.73 Noisetracker; Conversion of the Amiga PD music program; Soundtracker! Complete with sampled sound modules.
BU.74 Electronic Bank Statement; keep your bank account under control!
MU.05 Sheet v2.0; powerful spreadsheet with documentation and tutorial, Lotus compatible, 1280 rows x 280 columns!
MU.07 Gemini; superb NeoDesk style desktop replacement! German origin.
MU.12 Hard disk utilities; invaluable aid to hard disk users...
MU.13 F-Copy 3; Superb copier, will even backup some copy protected disks! Features: Fast Format, Virus Check, Scan Disk, Multiple copy, Verify...

EDUCATIONAL

BE.01 Things to do with numbers; full working demo! Plus: Kid Publisher...
BE.02 Kidprogs; Kids Graph, Kids Grid, Kids Music, Kids Piano, Kids Notes...
BE.03 Kidprogs; Kid Potato, Kids ABC, Kid Sketch, Kid Story...
BE.05 Colourbook; Fun for the younger child, an on screen colouring book!
BE.07 Word Extract, word puzzle help. Plus: Starchart; astronomy program.
BE.08 Geography Quiz; good educational game, plus Maths Made Easy.
BE.09 Spelling Made Easy, educational program that talks to you!
BE.10 Jigsaw; load any Degas picture as jigsaw puzzle! Great fun!
BE.11 KShapes and KShapes Plus; great Fuzzy Felt style fun for youngsters!
BE.12 Shipwreck; Answer sums in this fun game! + Guillotine Man; Hangman.
BE.13 The Wolf and 7 kids; superb multi-choice adventure game for the little ones. Race Cards; give answers to addition sums to race cars. Great!
BE.14 Noah's Ark; unscramble letters to make names of animals.
ME.02 EZGrade; teachers grading prog. Molgraph demo; 3D molecular display. Easel ST demo; loads desktop picture.
ME.04 Search; good historical study program created with STAC.
BE.15 Body Shop; Learn about Human Anatomy, build skeleton and assemble organs while learning correct names.
Dot to Dot; join the dots to discover the hidden picture! Also, design your own dot to dot picture. Both programs are great fun for young children!
ME.05 Play Spell; 2 levels from this great educational platform game. B.Spell; spelling game with digitised letter sounds & speech!
ME.06 Kid Publisher Professional! Desktop publishing for youngsters! Plus; Super Kidgrid; picture maker. Kid Painter; simple paint program. Design jigsaw type puzzles with ease! (Demos; save/print options disabled!)

CLIP ART

DC.01 Small symbols; seasonal, flags, school, cars, Disney, creatures...
DC.02 Titles, headings, Christmas, Easter, Hallowe'en, golf, sports...
BC.03 Logos, Trade marks, symbols, people, food, magazine titles...
DC.04 Alphabets, Christmas symbols, lots of eyes, happy, sad, weird...
DC.08 Garfield, Beano, Dandy pictures. Picswitch enables easy view & print!
DC.09 Viz Magazine; comic pictures, plus culinary; utensils, food...
MC.01 Boys and Girls; Pictures of small children at play.
MC.04 Illuminated Letters; Fancy A to Z. Plus; Funny pictures...

MUSIC

SO.01 Midi Special; Steinberg switch, 32 track sequencer, midi channel scope, hi-tech trivia.
SO.02 Composer; enter notes from midi keyboards or computer, copy, transpose or output. Plus: Soundcomputer.
SO.03 16 Voice Synthesiser; multi voice record, filter of controllers, variable resolution metronome...
SO.05 Alchimie Jr.; powerful midi sequencer, many features! (mono) (D/S).

HELP

DA.01 66 Adventure game solutions! Including: Future Wars, Bards Tale, Indian Jones, Zork 1, 2 and 3...
DA.02 62 Adventure game solutions! Including: Leather Goddesses, Kult, Ultimas 1 to 5, Space Quests...

DEMOS

BD.26 Snowman; digitised animation and music. 1/2Mb version! (D/S)
BD.33 STE demo; See what your STE is capable of and be amazed!
BD.34 What the Butler Saw; end of the pier style fun. Slightly naughty!
BD.38 ANI ST; 2 excellent animations produced with ANI ST (see: BU.57) Juggling Lamps and the Trash Can demo.
BD.39 Teenage Mutant Hero Turtles: Excellent sample of the Turtles theme tune plus picture. Great one for kids!
BD.40 Smooth Cyber Studio produced animation featuring a space station revolving on a starry background!
BD.41 Monarch; Impressive animation with excellent graphics and music.
MD.15 Snowman; digitised animation and music. Brilliant! (Mb)
MD.21 The Brilliant UNION multi demo colour monitor & joystick required!
MD.22 UNION Demo 2; The cuddly demo! Lots of amazing animations accessed by moving an arcade style jetman!
MD.28 Whataheck; demo collection by the Carebears again. Stunning!!
MD.30 Cyber demos; Buzy Bee, Saturday Morning Workout, Chasers, - superb animated films from Cyber Studio.
MD.32 STE Demos; 400 colour version of the Amiga classic BOING demo.
Movie ST; Animation using hardware scrolling & blitter routines!
MD.35 Aliens; digitised sound and pictures from this Sci-Fi classic!
MD.38 Probe; Animation of a Voyager style space probe slowly spinning in space then moving around a planet.
MD.41 Robocop; Digitised samples of some of the more memorable sections of the film plus digitised sound! Approximately 7 minutes long and comes on 2 packed disks! (not STE).
MD.42 When Harry Met Sally; The very amusing bit from the film where Sally demonstrates to Harry how to fake...
MD.43 Star Trek; Good sample of the opening sequence from the TV series plus a superb Enterprise animation...
MD.47 Police Squad; sampled opening sequence of this great series! (Mb)
MD.48 Jungle demo; graphically super amusing cartoon style animation with sampled music and sound effects! (STE)
MD.50 So Watt; Care Bears do it again. Great sounds and mega smooth graphics.
MD.51 Dark Side of the Spoon; superb collection of stunning demos!
MD.52 Robomix Demo; digitised scenes from the film with sampled speech, sound effects and soundtrack!
MD.53 Chad Jackson; hear the drummer get wicked; Stos Maestro, Neochrome used on this sampled sound demo!

To order any of the above disks simply quote the required disk numbers.
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Twilight Zone

Question: Where do you put all the crazy stories you've picked up, weird goings-on you've come across and off-the-wall remarks you've heard this month? Answer: Dunno, mate. But hang on, what's this...? Twilight Zone – a brief and uncultured look at the soft underbelly of ST computing

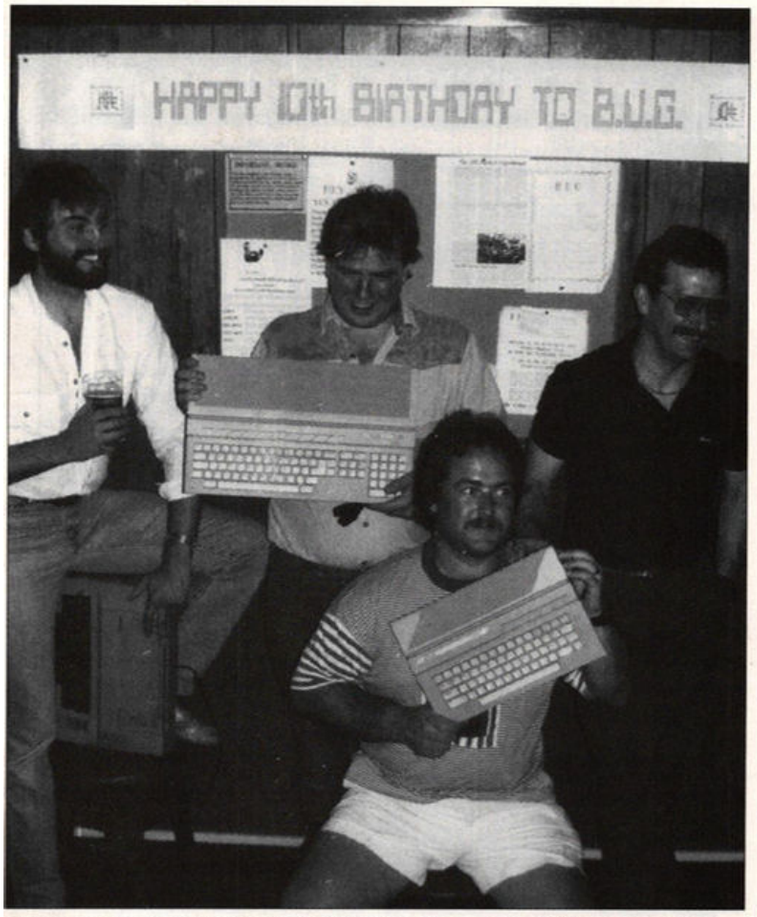
SILLY UGGERS

(AN OCCASIONAL SERIES OF STRANGE USER GROUPS)

The Birmingham User Group celebrates its tenth birthday by attempting to reboot various Atari computers in a very erotic fashion.

Steve Hough (pictured on the left) tries the famous "lateral interface," while Mark O'Hanlon (back centre) tries a clever variation on the tango. Keith Dutton (front centre) attempts "the squeeze," using great pressure to shrink down his ST, and finally, Dennis Kensella (right) has a great time warming up his pocket Portfolio.

Birmingham User Group, a club for ST owners, has more than 50 members, ranging in age from six to 60. Visitors are welcome to join them every Thursday at 7.30pm in the Matador pub in Birmingham's "Bull Ring." They're into Music, MIDI, DTP, Digitising and Games, and can even help with repairs, diagnostics, upgrades and modifications.



● Are you part of an ST User Group? Why not drop us a line and tell us about yourself? Make things easy for us – include a photo that we can send up mercilessly in return for your plug. Send your embarrassing Beadle-like black 'n' whites to: Silly Uggers, *ST FORMAT*, 30 Monmouth Street, Bath, Avon BA1 2BW

FAMOUS LAST WORDS

Those offhand remarks that PR folk let slip, when they think no-one's really listening to a word they've got to say...

Mr Wilde from Psygnosis
(When asked what he was showing at the Amiga show)
"Oh, the same old crap"

Mr Walker from Atari
(When asked about Atari programs being mistaken for PD)
"I don't think we give a tinker's..."

Mr Sparks from Acclaim
(When asked about new releases)
"Wow! Yeah! It's really *mega!*" *(Aside: "What am I on?")*

QUICK TIPS

No 46: HOW TO FOLD A MAGAZINE
Step 1. Open the magazine at the centre pages and look for two staples
Step 2. Remove any staples and take hold of your magazine at the top and bottom edge.
Step 3. Bring the top edge over to meet the bottom edge and press down on the crease.
Alternatively...
Step 1. Get a job at Newsfield and just wait 30 hours.

In memoriam
Andy Hutchinson,
new Editor,
Your Sinclair

So. Farewell
Then
Andy Hutch.

Once the Archangel
Of Saint Format.

You have seen
The Spectral Light
At the end
Of the Rainbow

But remember,

You have half the bits
You started with.

And nowhere to plug
Keith's floppy in.

EJ Carey (17´)

CALLING INTERNATIONAL RESCUE...

***ST FORMAT* has a problem.** Perhaps you could help.

We've received a letter from someone in Reykjavik, Iceland, and it goes like this:

"All since I buy my Atari STE from the Tolvudeild Maggna the sterio sound have not work. When you play som demo witch is in sterio you here nothing exept strainds noice. What is wrong? Is the DMA chip som ku ku? pleace give me an ansver.
TOLVUDEILD MAGGNA ER ALGERT RUSL, LELEG BUD MED ENGA DJONUSTU. MIG FINNST AD THAD ATTI AD TAKA UMBODID AF THEIM EINS OG SKOT, VEGNA SLAMNAR KINNINGAR VID SVONA GODA TOLVU EINS OG ATARI ST!
ADDAANDI MED MEIRU"

Do you know what he/she is on about? Can you translate the second half for us? What is a demo witch? Who is Algert Rusl? Has the whole of *ST FORMAT* gone ku ku? Answers on a postcard to: Twilight Translations, *ST FORMAT*, 30 Monmouth Street, Bath, Avon, BA1 2BW.

www.stformat.com

What's happening next month

Next month's bulging issue goes on sale on Thursday 14 November and we've got the biggest and brightest line-up of features, reviews and regulars you ever did see! Last month we taught you how to draw... well, next month we're going to show you how to start animating. You've seen the amazing animated intro sequences which are making their way into scores of top-of-the-range games. Well, we tell you how you can create your own full-screen animation miracles accompanied by clever sound effects and samples, using nothing more than a 520ST and a sparkle of creativity. With our Cover Disk intro-screen creator, you can start making it all come true instantly.

Then we've got a big feature on score writing for any aspiring musician. We examine the whole score-writing scene and assess the best and cheapest ways to start putting your musical inspirations down onto screen.

As winter draws in, how about curling up in bed with (pause) a good book? We're conducting a roundup of over 25 books on all things ST related, from general tips and advice to advanced programming. Whether you've got plans for world domination using your ST or you've just got a floppy drive fetish, there's a book on the shelves to give you a helping hand. Next month we reveal which ones are a help and which ones lead you up the garden path.

Barring an act of God, we should be reviewing *Cruise for a Corpse* from Delphine *(isn't this getting a bit like Midwinter 2?)* and US Gold's much talked-about *Gauntlet 3* (but don't hold your breath because we've seen a nearly-finished demo). Also expected in is *MiG-29M Superfulcrum*. After playing this month's Cover Disk demo, next issue you can see whether we think the full game is worth a *FORMAT* Gold. Also due in is Microprose's new racing game *Grand Prix*, which is the follow-up to the classic *Stunt Car Racer*. It's from Microprose, though, so better not hold your breath. If they can come up with the goods we'll have a demo of this groundbreaking racer on next month's Cover Disk so you can try it out for yourself.

Then we've got our review of *Band in a Box* which we had to drop at the last minute this month, and we're getting our hands on Microdeal's *Stereo Replay* sound cartridge. MPH have a stereo sampler of their own lined up – if both are ready at the same time you can expect a head-to-head next issue.

Plus we've got the usual line-up of controversial letters, games and technical tips and more exclusive news stories.

You know where to be on Thursday 14 November. Don't miss us!

How you can find *ST FORMAT*

Still having trouble getting hold of *ST FORMAT?* It's like this, you see. Because of our incredible efficiency, Britain's best and most popular ST magazine has actually been going on sale earlier than the advertised date in some places – which means it's even more likely than before to disappear off the shelves before you even get in the newsagent's door.

What can you do? If your newsagent doesn't have a copy on the shelf, try asking the person standing behind the counter. They might have some more in the back room. If that doesn't work, check one of the bigger newsagents, like John Menzies or WH Smith. If you don't want to subscribe – and see page 130 for some good reasons why you should – fill in the form below and hand it to your newsagent. Every newsagent in the country will be delighted to reserve you a copy each month – or even deliver it to your door.

Still no luck? Then call the extremely helpful Kate Hodges in Future's circulation department on ☎ 0225 442244 and tell her which of Future's magazines you're after and where you've tried to get hold of it. She can sort out your problems in no time at all!

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TEN ALTERNATIVE USES FOR FRACTALS

1. Strap your brothers/sisters/small parents to a chair in front of your ST. Colour-cycle a Mandelbrot set in front of them for an hour while playing "Can you feel the force?" backwards on the stereo. They'll fall under your power and never refuse to make coffee for you again.

2. Print a Mandelbrot set on your colour printer and place the printout on the floor by your bed before you go to sleep. In the morning, when your mum/wife comes in, lean over it, groaning. Get the entire day off school/work.

3. Down the pub, use a Julia set picture to explain to your mates that although evolution and harmony are constant in all forms, mathematical and biological, and although many things repeat endlessly, you're not buying the next round again.

4. Print a zoom-in of the Mandelbrot set onto T-shirts and sell them to all your hippie flower-power mates as the latest in symbiotic, ergo-techno fashion to wear at Happy Mondays gigs.

5. Print a giant, full-colour fractal mountain-scape onto a huge sheet of paper and pin it up on the outside of your bedroom window. Now every morning you'll wake up in the Alps, but it won't be cold (unless of course you're actually reading this in the Alps).

6. Print an even-larger mountain-scape onto a hoarding 300 feet across and stand it up anywhere in East Anglia. Everyone will think the Fens have erupted and the place will at last have a view.

7. Keep your brothers/sisters out of your hair for the rest of your life, by asking them to count exactly how many times they can see the Mandelbrot set repeated inside itself.

8. Explain away the fact that you spilt beer/milk/coffee all over your mother-in-law's best Axminster carpet, using nothing more than a Sierpinski Triangle generator, two small pendulums and a thesis on the inter-causality of events. Then clean it up.

9. Tell your nagging mother that she mustn't disturb you while you're working on your fractal project in your bedroom (instead of tidying it up). Commence rendering a frame showing the highest level of zoom, at 4,000 iterations, and then nip out the window to the pub. You should have around three days to kill before she expects to see the picture.

10. Generate several hundred fractal trees and print them out onto large sheets of cardboard. Place them in all your neighbours' gardens to stop the local dogs peeing in yours.

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I'M COMIN' TO GET YAA!

Trains! Never trust 'em! Never on time. *Railroad Tycoon* was four months late!

You call that a world? Where are the people? Where's the pollution? What about destruction of the rainforests? Why does the ozone layer look okay? It's all so horribly... well, *beautiful*

Book your seat on next month's train ride into oblivion for our biggest issue of the year! Develop your music skills with our in-depth look at score-writing packages; watch out for our full review of the major follow-up to *Timeworks DTP*. Plus: we've got more mammoth game and technical tips, including a new assembly language tips section. Who knows, maybe *Cruise for a Corpse* will finally be ready for review

We respectfully advise you not to take illegal relaxants while reading this magazine... you may not get to the end!

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